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[illegible] SSMENT FROM THE FEMUR

By

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[illegible] onds t[illegible] [illegible]lly, fr[illegible] [illegible] g[illegible] [illegible]rough this resear[illegible] [illegible] twenty years.

The person I ne[illegible] [illegible]e most is Dr. Will[illegible] [illegible]ples, my mentor a[illegible] [illegible]. He provided me with th[illegible] [illegible]n[illegible]ty to obta[illegible] [illegible] education. Dr. Maples [illegible] tolerated me, [illegible] taught me. It is because [illegible] [illegible] call [illegible] Forensic Anthropologist.

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[illegible]

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Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

ANTERIOR FEMORAL CURVATURE [illegible]
RACE ASSESSMENT FROM THE FEMUR

by

Mary B. Trudell

December 1996

Chairman: William R. Maples
Major Department: Anthropology

The question of race has been a long running debate in the field of anthropology. However, forensic anthropologists must yield to society when unknown remains need to be identified. Increasing need for accurate race assessment from postcranial skeletal remains has emphasized the lack of simple, replicable methods by which to accomplish this task. Several ideas and techniques have been proposed, but without adequate results.

Anterior femoral curvature was first suggested and researched by T. Dale Stewart in 1962. The technique used in that study, which involved "leveling" the bone with the use of a wedge under the proximal end, was subjective at best, and he compared single measurements against others without the assistance of discriminant function analysis. Two later studies only reused Stewart's technique and/or

[illegible] undert[illegible] [illegible] provide an [illegible] technique.

Sever[illegible] [illegible], [illegible] [illegible] Philadelp[illegible] [illegible] Louisiana St[illegible] [illegible] [illegible] racially black and whit[illegible] [illegible] selected based on pre[illegible] [illegible] identification. For this pro[illegible], I made [illegible] six newly devel[illegible] measure[illegible] [illegible] of each individual were also [illegible]. [illegible] raw measurements involved placing the femur [illegible] down on two specially made aluminum blocks [illegible] the distance from the bone to the table or b[illegible]. [illegible] was then subtracted from the height [illegible].

[illegible] the data through SPSS[X] using [illegible] [illegible] es selected provided an accuracy of [illegible] right femur and 86.10% with the left femur [illegible] the individual was important, so age was divided [illegible] two groups: under 30 and over 30. Most skeletons can [illegible]ly aged into these categories.

The question of why this racial trait exists was also [illegible]. Variations within human limbs can be traced to [illegible] in different climates combined with the bipedal [illegible] that is unique to humans.

[illegible]

[illegible]

"Race" [illegible] h the po[illegible] some popula[illegible] the drive [illegible], the concep[illegible] [illegible]sification [illegible] ties has become [illegible]ated [illegible]blem is espec[illegible] troublesome for foren[illegible] [illegible]pologists. Ques[illegible]ions of age, sex, and other [illegible]teristics are answered in an attempt to individualize [illegible]tified human remains. This includes ancestry. To [illegible]or fail to report race would make the anthropologist [illegible]ct in his duty.

The applied science of forensic anthropology has little [illegible] do with the debate about the existence of races. The [illegible]troversy is over natural biological divisions--taxonomy [illegible] 1992). Modern anthropologists rarely support the [illegible]ision of humankind into four or five categories. The [illegible] of race in a biological aspect is twofold [illegible]ficatory and a true biological phenomenon (Dobzhansky, [illegible]. Races are based on morphological, including skeletal, traits. However, this is still fraught with problems due to individual and populational variation (Hinkes, 1994).

[illegible] is a popular [illegible] concept. [illegible] simply an expression of gene [illegible]. [illegible] individuals are genetically different, except for identical [illegible]. According to population genetics, which is the definition of choice, races are merely individuals, usually geographically isolated, sharing collective features passed down by a common ancestor and modified to some degree by environmental pressures. Groups of nonhuman animals may eventually form new species, but modern technologies and [illegible] have broken down the isolation factor in humans ([illegible], 1994). Variations, such as skin color, exhibit [illegible] variation across geographical areas. Such distributions are called clines, which can not be neatly categorized. "If races did not exist they would have to be invented. Since they do exist they need not be invented, they need to be understood" (Dobzhansky, 1968, p 78).

While anthropologists are moving away from a discrete [illegible] biological definition of race, the general public's understanding of the concept is a central topic in forensic anthropology. Everyone in our society has a "racial identity," though the biological and cultural definitions may differ. While race is a difficult concept at best, the fact remains that in American culture people are categorized. The classifications are most often based on skin color. Due to the variety within groups, however, that variable is not always readily apparent. Nor is it obvious in the remains that a forensic anthropologist often

[illegible] People of mixed [illegible] [illegible]e racial category wh[illegible] [illegible] [illegible]haracteristic of another. [illegible] [illegible] are separate entities. Th[illegible] [illegible]ist understandably has frequent diff[illegible] [illegible]ral race to a skeleton.

[illegible] anthropologists are asked to provide a profile [illegible] identified to medical and legal investigators in order to make a positive identification of that person. Part of a person's profile is race. The categories for race used by the forensic anthropologist must reflect those in [illegible] by the larger society. Three or four racial classifications are commonly used today. Those of European, [illegible]erranean, Slavic and Middle Eastern descent are categorized as Caucasoids or Whites. Africans are included in the Negroid or Black race, while Asians and Native Americans are either grouped as Mongoloids or maintained as separate entities. The National Crime Information Center, which is the law enforcement data bank for missing and recovered persons, offers five race classifications: White, Black, Asian, Native American, and Unknown.

Racial differences are not clear-cut. There are gradients of a trait rather than its presence or absence. The problem then becomes that forensic anthropologists rely on discriminant markers of race, or those that can be compared to a model. Numerous traits, both metric and non-metric, fit that criterion. The anthropologist does the

[illegible]

[illegible] forensi[illegible] is [illegible] This is [illegible] The first part is [illegible]logical pr[illegible] the second is the individual identification. The [illegible] is done to narrow the search range to a [illegible] size. Forensic anthropologists take for granted [illegible] that race can be determined reasonably accura[illegible] from skeletal remains. The forensic anthropologist does not attempt to classify but rather to identify. "The medical examiner does not want a theoretical discussion of race, he wants one word to fill in the blank space on a form" (Hinkes, 1994, p 51). Thus we need to get beyond the philosophical questions of race and provide accurate descriptions of the biological diversity in terms of local and societal categories (Rhine, 1994).

Still the problem remains for the forensic anthropologist. While he can safely say racially determined behavior does not exist, and indeed race is merely the increased frequency of particular genes in a given population, he still must make a determination of an individual's identity based on morphological skeletal characteristics. The anthropologist says no more than the person was most likely classified as white or black or Asian or Native American. He cannot say if the remains were those of an Irish or an Italian, or a Nigerian or

[illegible]. Nor can he make any remarks [illegible] individual's temperament or intelligence from the [illegible]. [illegible] there are conflicting racial traits, the forensic anthropologist can only say as much, with little speculation [illegible] the actual race classification chosen in life. To deny him the chance to provide a racial category is tantamount to denying a gender category. "Equality and inequality are sociological, and identity and diversity are biological phenomena" (Dobzhansky, 1968, p 79).

Many techniques are available to assist in answering the question of racial affiliation, yet physical anthropologists are always seeking more information for their search. The reliability of these methods, especially for postcranial remains, is not always satisfactory. Racial characteristics are most evident in the cranium. However, the skull is not always available for assessment due to the use of high-velocity weaponry or disarticulation. The limbs can be used to a limited extent with current techniques. Studies on the postcranial bones are few, and most do not provide particularly accurate results.

My research attempted to provide a more accurate technique to determine ancestry from the morphology of the femur. It uses a revision of the technique established by Stewart in 1962, which is used in both of the other studies of anterior femoral curvature. The methods of the accumulation of the data and its analysis are also presented. The goal of this project is to determine the

[illegible] feature as a race assessor and, [illegible] replicable and easy method of classification.

This study [illegible] addresses the question of why a racial difference would exist initially. In order for the morphology of a particular feature to be useful in the assessment of a trait such as race, variation must be present. In addition, the variation must be non-random. The shape of the femur is due to genetic, functional, and environmental causes. Walensky (1965) realized this fact, but he did not propose any explanations. This study includes a discussion of an evolutionary implication and interpretation.

All of this has nothing to do with the overall race debate. There is no argument that racial diversity is geographically influenced. The practice of forensic anthropology does not provide exoneration for the old stance of racial classification. It merely attempts to provide a label for an individual based on skeletal traits (Sauer, 1992). This research is meant only to assist forensic anthropologists in their arduous task of identifying the unknown.

[illegible]

[illegible]

While [illegible] long been observed and accepted as a [illegible] determining race, the use of the postcranial [illegible] that task has been documented only in a limited number of studies. The utility of the pelvis and limbs was researched, but no simple, single method for assessment was proposed. Most emphasize the need for a combination of bones in the accurate analysis of ancestry. The use of the femur, and in particular anterior femoral curvature, has been suggested in three projects. While the differences between groups were noted by each of the authors, no adequate study has confirmed the use of this trait in the classification of individuals into racial categories.

Postcranial Race Identifiers

Interest in racial differences in humans reached a high point in the early part of the twentieth century. Numerous studies were done during that period that centered on the variations between whites and blacks. Each focused on a particular bone or area of the body. Some attempted to show the "evolutionary advancement" of the whites. None were adequate for individual race assessment.

Todd (1929) attempted [illegible] between the races. The sample [illegible] whites and blacks in Cleveland, [illegible] known as the Hamann-Todd Collection. [illegible] dimensions were compared, and the results [illegible] in the face and trunk. The pelvis [illegible] differences which centered on the lower iliac height and the narrow pelvic width of blacks. The black lower limb was proportional to the overall length, and that of whites was less proportionate. The femur was not specifically addressed. In addition, blacks had more variation for the measured traits. Overall, there were no significant differences found between the races in relation to dimensions of the postcranial bones. However, Todd believed in the "pure" races, and accounted for the lack of variation by admixture.

Hrdlicka (1942) analyzed the scapula for racial variation, but he mostly studied whites. He divided the whites into groups according to region of origin. The overall shape of the scapular body was divided into six types. Racial variations were seen in the percentage of a particular shape in each group. Whites had predominately triangular shaped scapulae, while blacks exhibited accessory teres borders more frequently. The superior border also varied by race, with whites possessing a more horizontal shape and blacks having oblique borders. The scapular notch showed very little racial variation. No explanations for

the dissimilarity [illegible]. The [illegible] group [illegible]ation was to [illegible] individual [illegible] assessment from the information [illegible].

The study by Letterman (1941) was to [illegible] the race and sex differences of the greater sciatic notch of the pelvis. The Terry Collection, then still housed at Washington University, was used. The measurement of the greatest width of the greater sciatic notch showed a mean difference between white and black males of 3.4 mm and between females of 2.56 mm, with whites being larger. Height varied less, but significant racial differences existed (1.63 mm in males; 2.56 mm in females). Distance from the posterior inferior iliac spine to the point at which the lines of the greatest height and greatest width intersected was 3.8 mm larger in white males, but much less significant (1.5 mm) in females. Overall, white averages were larger than blacks. The reasoning seems to be only that the ilium is smaller in blacks, but Letterman offered no explanation of why. All the author said was that blacks were less variable, which was against previous thoughts that increased racial mixture, as in American blacks, increased variability.

Ingalls (1927) showed that the head of the femur in position is more laterally and posteriorly placed in blacks than in whites. This conformation makes the knee joint less stable in blacks, but does not answer the question of identification.

[illegible] ving the [illegible] this [illegible] resurgence came [illegible] and several [illegible] centered on the [illegible] were [illegible]. Again, no exceptional method [illegible] ssing race [illegible]

In [illegible], Farrally and Moore produced one [illegible] only [illegible] ng to racial differences in long [illegible]. The authors [illegible] to show the differences between [illegible] and whites in the morphology and function of the knee [illegible]. The theory that increased length affected locomotion was analyzed. Nine standard measurements of the bone, as well as one that was created, were taken on a sample of [illegible] blacks and 27 whites. The results indicated that adaptation to environmental temperature created changes in the structure of the bones, especially at the positioning of the knee. However, no clear and distinct difference was found that would easily separate the groups.

Feeling the postcranial bones, except the femur, were largely under-utilized for race assessment, Iscan (1983) studied the pelvis. After the pelvis was assembled with "several rubber bands", three measurements were selected for analysis. The first, biiliac breadth, was measure on an osteometric board at the maximum width between the iliac crests. The anteroposterior height, or conjugate diameter, was an average of the distances between the sacral promontory and each pubic crest. The maximum measure

between the [illegible]. The differe[illegible] each variable were statistica[illegible]. The most diagnostic variable was the trans[illegible], and age was a contributing factor to racial assessment. [illegible] were more easily classified than males (Iscan, 1983).

While a useful study, race identification from the pelvis has not been particularly applicable. While the best results were 88% accurate for females and 83% for males (Iscan, 1983), the extra burden of needing fully complete innominates and a sacrum, a rarity even in forensic cases, makes this technique difficult to utilize. In addition, the method by which the measurements must be taken--reconstructing the pelvis and sacrum with rubberbands--is arduous and impractical.

DiBennardo and Taylor (1985) also saw a need for racial assessment from postcranial bones. They chose the femur and pelvis because of the accuracy in sexing the individual from these bones. Several measurements of a single side of the pelvis were used. The measurements of the femur included maximum length, circumference at midshaft, epicondylar breadth, and the angle of position. The results yielded information readily observable to the eye: black femurs were longer and more gracile. However, the authors claimed a 95% accuracy in predicting both race and sex from the two bones. Determination of race alone was only 87% reliable. The use of both the pelvis and the femur were linked to the

[illegible] length to lower limb [illegible] length to the femoral length was the "[illegible]" [illegible] analysis. Again, the problem of [illegible] remains for testing was encountered (DiBennardo and Taylor, 1985).

A more recent study concerning the femur was published in 1990. The maximum height of the anterior outlet of the intercondylar notch was measured. The femur was laid on a flat surface, with the posterior side in contact with the table. The measurement was taken, using sliding calipers, from the uppermost point of the outlet to the table. Variations were calculated using basic histograms, as well as means and standard deviations. Both race of the same sex and sex of the same race could be distinguished. The race or sex of an individual had to be first known before the other trait could be determined using this method. The best estimation was that white males mostly had maximum notch heights of 31 mm or more. All results, however, ranged in accuracy from 66.66% to 88.31%. The authors recommended comparing measures from a case with the histograms provided to make more accurate determinations. The racial differences seen in the intercondylar notch height were tied to anterior femoral curvature rotating the anterior outlet (Baker, Gill, and Kieffer, 1990).

Iscan (1990) furthered his 1983 study by developing discriminant function formulae using as few measurements from the postcranial skeleton as accurately possible. The

complete and/or fragmentary nature [illegible] was the impetus for the new research. Using the Hamann-Todd collection, the authors made twenty-one measurements from the femur, tibia, and pelvis. Nine of these dimensions, including four pelvic, three femoral and two tibial, were selected by the stepwise function to classify race. Again, the complete reconstruction of the pelvis using rubber bands was necessary to obtain one value. A formula was developed using these measures, and the ability to correctly classify according to race was stated as 94.9% for males and 90.7% for females. For remains from which these nine measures could not be obtained, the authors offered a table of coefficients to use, as well as a graph against which the results of a case could be compared. The accuracy rate using these alternate scores ranged from 67.0% to 93.0%. The femur and tibia used together, which allowed for the easiest measuring, yielded accuracy of 87.5% for males and 79.5% for females. Iscan's study underscores the fact that the femur shows the least amount of metric racial variation, despite the curvature and other features.

Anterior Femoral Curvature

The first study of anterior femoral curvature for race assessment was done by T. Dale Stewart in 1962. His reason for pursuing this method of race determination stemmed from the following:

> For a [illegible] aided in skeletal identification by a [illegible] regarding long bones which I learned from the late [illegible] Hrdlicka during the many years of my apprenticeship under him. I recall that when together we examined bones of unknown individuals he would call attention to the amount of curvature or bowing (or conversely to the relative straightness) of the long bones and comment to the effect that *skeletons of Negroes are always to be distinguished from those of other races by the straightness of their long bones.* [italics in original](p. 1)

Stewart admitted he was never certain of the method's limitations. Therefore, he set out to study the phenomenon.

A sample of 35 right femurs were taken from the skeletal collection of the Smithsonian, representing each of three racial groups. The Blacks and Whites of the sample died between 1895 and 1910, while the Dakota Indians died between 1725 and 1825. The blacks appeared to be without white admixture.

Each femur was placed flat on a table, anterior side up, resting on its condyles and quadratus tubercle. A wooden wedge was inserted under the proximal end until the bone was horizontal and level, with the proximal and distal concavities at the same height. The height from the table was measured at the leveling points, the greatest concavity (anterior femoral curvature), the highest point of the cervical tubercle at the greater trochanter, and the highest point of the head. The first two measurements gave anterior femoral curvature, and the latter two gave torsion. Condylar length was used in ratios with the previous two heights. The distance from the most proximal point of the

[illegible] the point of the great[illegible] was also measured. The ratio of the two [illegible] [illegible]d.

Stewart concluded the longest femurs were [illegible] blacks, and the Indians had the greatest curvature, both [illegible]ly and relative to length. However, only the differences between blacks and Indians were statistically significant. Torsion and curvature appeared related, but the connection may have only been in the fact that both were great in the Indians. Stewart remeasured the samples, this time rotating the femurs medially until the anterior femoral curvature was in line with the proximal area of attachment of the vastus lateralis muscle. This eliminated the torsion factor. All the remeasuring accomplished was further separation of the Indians from the blacks and whites, but not the differences between the latter two. Stewart did note, however, that pilastry and cross-sectional shape also can be used to some moderate degree of certainty to race skeletal remains. Stewart pointed out areas of further research, which included other long bones and the "why"s of anterior femoral curvature.

In 1965, Walensky furthered Stewart's work when he increased the sample size. In addition, he examined previously unstudied groups, as well as sex and side differences in the amount and position of femoral curvature. A total of 874 femurs, including white, Indian, Eskimo, a

heterogenous group of blacks, and a "pure" group of blacks, made up the sample.

The side differences were limited to the point of maximum curvature, with the exception of the homogeneous black group. The right side was longer and more curved with a lower point of maximum curvature that the left. Females also followed a more distal point of maximum curvature, without any other differences in the sexes.

The racial differences were more apparent. The pure black sample had the longest femurs, which were least bowed. The mixed black group was between the first and the whites, which were only slightly more curved. The Indians had the most bowing with the most distally located point of maximum curvature. The Eskimos were more closely associated with the Indians.

The reasons for the bowing appeared to be functional and hereditary, with the latter being more important. Femoral length seemed to be associated with a lack of curvature. Ultimately, the bases for anterior femoral curvature are probably intertwined, including intrinsic ones that affect the growth and shape, inherited factors that are rooted in ancestry, and external forces that act on the shape to modify it.

Gilbert's study in 1976 only increased the information available on the Native American populations. He used the data from Stewart's research for the sample of whites and blacks, with the exception of thirty ectomorphic (over 74

[illegible] height weighing less th[illegible]
[illegible]morphic (over 200 pounds but [illegible]
[illegible] and blacks. His goal was to [illegible]
[illegible]ons of causes of anterior femora[illegible]
[illegible]us studies had put forth. The sample included [illegible]
[illegible] only right femurs when available.

[illegible] results produced five hypotheses. The first, [illegible] equestrian nomadic lifestyle was the cause, was [illegible]ounted by the presence of similar degrees of curvature [illegible] specimens without access to horses. Next, the idea that [illegible] was a characteristic of earlier forms only was proven [illegible] by the presence of bowing in modern samples. The [illegible] hypothesis, that it was a consequence of Bergmann's [illegible], was disproved by the differences present in samples [illegible] similar climes. The fourth proposal was that anterior [illegible]al curvature was the outcome of postural habits. This [illegible] again disproved by the presence of similar cultures with [illegible]rent habits, and vice versa. The final theory was that [illegible] the curvature had a genetic basis, it was affected by [illegible]ght. Glibert claimed this idea as the true reason [illegible]ause of the variance seen between groups, and the [illegible]crease (or decrease) of curvature found in the fat and [illegible] specimens within their groups. The problem with [illegible]bert's conclusions is that he based his opinion on a [illegible]ted sample size which was representative of extremes.

Nonmetric analysis of race from the femur is not the best method, but it has been utilized often. Visual

[illegible] some indica[illegible] although n[illegible] f accuracy has [illegible] [illegible]d involves p[illegible]ing the femur [illegible] [illegible]rior side towar[illegible] the table [illegible] [illegible] hand under the bone. If t[illegible] [illegible]rior side of the femur, the in[illegible] [illegible] (Maples, 1993, personal comm[illegible]. [illegible] [illegible]dure can quickly separate whit[illegible]

None of these studies give sati[illegible] [illegible]n of why femoral curvature [illegible], the [illegible]ty of this trait as a classifica[illegible] [illegible]ermined Although forensic and [illegible] [illegible]e long talked of the differences[illegible] any test t[illegible] [illegible]ferences has not been developed

[illegible]

[illegible] AND MATE[illegible]

[illegible] requires very [illegible] The specimens [illegible] regulations throughout [illegible] all readily available [illegible] the need to have a simple, [illegible]icable, [illegible] a race from postcranial remains [illegible]

[illegible] taken to remedy the weaknesses of [illegible] distinction between whites and [illegible] that is where the greatest [illegible] methods. Stewart recognized that [illegible] separated Native American bones [illegible] of White [illegible], but provided no substantial [illegible] on between [illegible] other groups.

The reason for [illegible] a new method of measuring the [illegible] reduce the [illegible]ivity of Stewart's technique. [illegible] used "eyeballing" as the standard for determining the femur was at the leveling point. The femur was placed on a table, and a wooden wedge was placed under the proximal end of the bone, "so as to raise the deepest point (bottom) of the anterior concavity at the proximal end

[illegible] same le[illegible] the bottom of [illegible] [illegible] eral end" ([illegible]wart, 1962, p. [illegible]). [illegible] [illegible] level is [illegible], nor is it [illegible] dete[illegible].

[illegible] was further hampered by the la[illegible] [illegible] computer statistical programs. [illegible] [illegible] to determine the legitimacy of his [illegible], [illegible] did not collect a large sample of [illegible] sexes. [illegible] Stewart spend the great amounts of time [illegible] [illegible] time to do statistics, whether [illegible] computer [illegible].

Research Sample

The [illegible] research was gathered from numerou[illegible] [illegible] donated and unidentified remains. [illegible] was located in the forensic [illegible] of Florida and the Universit[illegible] [illegible] Tennessee. The University of Florida collection at the [illegible] Pound Human Identification Laboratory consisted of [illegible]ly forensic specimens. A total of 36 individuals were [illegible] with only 16 being in the final analysis. Those [illegible]urs chosen at the University of Tennessee Department of [illegible]thropology were from both forensic cases and donated bodies at the Bass Anthropological Research Facility. A [illegible]al of 50 individuals were selected from this [illegible]tribution.

The majority of the sample specimens were from two [illegible]erent collections at the Smithsonian Institution. The

[illegible] age at death, [illegible]. Begun [illegible] Terry, this [illegible] made up [illegible] remains from morgues [illegible] St. Louis, Missouri, [illegible] from tuberculosis [illegible] as well as some [illegible] corpses. All bodies were [illegible] prior to being [illegible] to Terry, so complete pathology reports were available. Photographs, plaster casts, hair and tissue samples were acquired from many or all of the cadavers prior to scientific examination. After the Washington University Medical School students dissected the bodies, the skeletons were stored for osteological analysis. Mildred Trotter [illegible] the collection after Terry retired, filling in the demographic gaps. She, along with T. Dale Stewart, was also responsible for transferring the treasury to the National Museum of Natural History. The number of skeletons now housed in the collection total 1732, ranging in age from 16-102 years (Hunt 1994, personal communication).

The Huntington collection consisted of immigrant and American populations of known ancestry or country of origin, age at death, and sex. Dr. George Huntington, an anatomy professor at the College of Physicians and Surgeons in New York City, accumulated the remains during the end of the 19th and beginning of the 20th centuries. The cadavers, similar to the Terry collection, were wards of the state [illegible] for pauper burials. Over 3600 individuals, with nearly complete records of age, race and/or nationality,

[illegible] of death, were acquired Most were [illegible] immigra[illegible], with several American blacks repres[illegible] all skele[illegible] elements were maintained in the col[illegible] no separation by individual was made Currently, [illegible] are sorted by type, which aided in completing this [illegible] 1994, personal communication)

The research sample included only those individu[illegible] positively identified, or whose race was determined by [illegible] tissue or hair samples present when the remains were collected If the race was determined solely on the basis of skeletal analysis, the specimen was rejected. Any [illegible]men with a pathological deformity affecting the legs [illegible] rejected as well An even breakdown according to sex and race was attempted, though fewer black females seemed to [illegible] the problem in all collections utilized.

The material for the test sample came from two very different collections Femurs were used from the historical collection of the First African Baptist Church of Philadelphia. This population consisted of several skeletons of free blacks interred between 1810 and 1842. The average age was mid-thirties for both males and females. While the remains were not positively identified, the population was historically documented as being only African-American (Crist, 1994, personal communication). The forensic laboratory at the Louisiana State University Department of Geography and Anthropology provided modern specimens from forensic cases The race of the individual

[illegible] same [illegible] sample.

Femoral Measurements

[illegible] new method for measuring anterior [illegible] [illegible]cantly from the previously [illegible] [illegible]. Most notable, the curvature is determined [illegible] surface of the femur facing the table. [illegible] [illegible]urements were made according to the [illegible] Olivier (1969). Additionally, new [illegible] [illegible]. The new measures, which are noted as [illegible] [illegible] described and illustrated. Figure 3.1 is the [illegible] used to record the measurements, along with the variable designations for the statistical analysis. Figure 3.2 delineates the anatomical points used in the study.

The standard measurements of the femur made [illegible] osteometric board included the maximum length, the [illegible] length, and the bicondylar breadth. After the maximum length was obtained, the length of the femur was divided into three equal portions: one-quarter length, one-half length, and three-quarter length. Points were marked at the end of each segment. The importance of these new points will be explained later.

Diameter measurements were made from the anterior and lateral surfaces at the subtrochanteric level and the midshaft. The midline diameters give an indication of pilastry and cross-sectional shape. Stewart noted the

[illegible]

[illegible] DATA NUMBER	CASENAME	CASE NUMBER:	CASENUM
SEX: 1-M; 2-F	AGE: SEE BELOW	RACE: 1-W; 2-B	
MEASUREMENTS (IN MM)		RIGHT	LEFT
MAXIMUM LENGTH		RMAX	LMAX
OBLIQUE LENGTH (IN POSITION)		ROBL	LOBL
BICONDYLAR BREADTH		RBICON	LBICON
AP DIAMETER AT MIDSHAFT		RAPMID	LAPMID
TRANSVERSE DIAMETER AT MIDSHAFT		RTRMID	LTRMID
SUBTROCHANTERIC AP DIAMETER		RAPSUB	LAPSUB
SUBTROCHANTERIC TRANSVERSE		RTRSUB	LTRSUB
DISTANCE FROM TABLE (R1)		RR1	LR1
DISTANCE FROM TABLE (R2)		RR2	LR2
DISTANCE FROM TABLE (R3)		RR3	LR3
DISTANCE FROM TABLE (PROXIMAL)		RPROX	LPROX
DISTANCE FROM BLOCK (DISTAL)		RBDIS	LBDIS
DISTANCE FROM BLOCK (PROXIMAL)		RBPROX	LBPROX
PROXIMAL - DISTAL DISTANCE		RTORS	LTORS

AGE GROUPS 15-19=1; 20-29=2, 30-39=3, 40-49=4; 50-59=5, 60-69=6, 70+=7

Figure 3.1: The sheet was used to record measurements as they were taken. The variable designations were added for the statistical analysis.

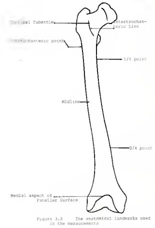


Figure 3.2 The anatomical landmarks used in the measurements

[illegible] between [illegible]. The [illegible] diameter [illegible] x millimeter [illegible] lesser trochanter, determine [illegible] platymeria, [illegible] to femur (Olivier, 1969). [illegible] transverse [illegible] determined at each point with the calipers [illegible] the table. By turning the femur until [illegible] truly perpendicular to the table, the [illegible] anterior-posterior, diameter was made.

[illegible] the femur was placed on two blocks, with the [illegible] of the bone facing the table (Figure 3.3). [illegible] of the blocks, which were cut from a solid [illegible] um, were exactly 50 mm by 50 mm by 100 mm [illegible]. The measurements were collected using a [illegible] caliper, in tenths of millimeters. Correct [illegible] the femur was accomplished by ensuring that [illegible] trochanter rested completely on one [illegible] other end, the lateral condyle also contacted [illegible] the medial condyle was suspended (Figures [illegible] from the surface of the block to [illegible] of the medial patellar joint surface composed [illegible] measure (Figure 3.7). The distal condyles [illegible] flat on the block, suspending the greater [illegible] the femur (Figure 3.8, 3.9). The [illegible] al tubercle at the intertrochanteric [illegible] the proximal measure (Figure 3.10) [illegible] measurement from the proximal

Figure [illegible] The femur [illegible] then meas[illegible]

Figure 3.4 The blocks were cut from solid aluminum to precisely [illegible] mm X [illegible] mm X 100 mm. The height of the bl[illegible] [illegible] actual measures.

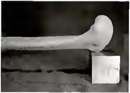


Figure 3.6: [illegible] of the correct distal positioning with the medial cord, [illegible]

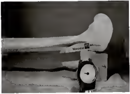


Figure 3.7: The distal measure (RBDIS, LBDIS) is from the medial patellar surface to the block

[illegible], [illegible] in the [illegible] was determined.

[illegible]terior [illegible] measurement of most [illegible] at four points. The distance from the [illegible] three previously determined points [illegible] (Figures 3.11, [illegible], 3.13). In addition, [illegible] cervical tubercle to the table was [illegible] the amount of curvature (Figure 3.1[illegible]).

After finishing [illegible] measurements, the heights of the blocks [illegible] obtain real distances. This was [illegible] to use any size [illegible] with the technique [illegible] determine anterior femoral curvature. Provided [illegible] has [illegible] measures of the [illegible] used, the results should not vary.

<u>Discriminant Function Analysis</u>

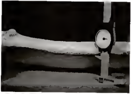
From the above measurements, anterior femoral curvature, along with any other racially influenced factors, could be established. Statistical analyses were performed [illegible] the relationships of the characteristics one to another were created. The mainframe computer at the University of Southern Mississippi provided the SPSS[X] program, from which all statistical functions were calculated. The DISCRIMINANT command was used, with the RAO subcommand creating the stepwise analysis.

Discriminant function analysis combines variables to predict into which category an unknown case will be placed;

[illegible]

[illegible] (LRPROX, LBRPOX) [illegible] he block

[illegible] measurement [illegible] ante[illegible] ([illegible] RR1, LR1) is taken at [illegible] of the total length



[illegible] ([illegible] RR2, LR2) [illegible] length

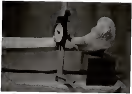


Figure 3.10. Three-quarters of the length of the femur is the third measure (R9L [illegible]).

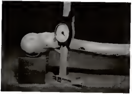


Figure 3.11. [illegible] measurement [illegible], femur [illegible] proximally [illegible] line to the table.

[illegible] By [illegible] on analysis [illegible] the separa[illegible] [illegible] from the [illegible] 1985). [illegible] results, discussed [illegible] the elimination of some measurements [illegible] believed to be important.

The ultimate goal of this stu[illegible] [illegible] utilized technique to bette[illegible] identi[illegible] [illegible] by forensic anthropologists. A formu[illegible] [illegible] specimen can be accurately placed in a r[illegible] [illegible]egory was devised. The technique to obtain the measure[illegible] [illegible] simple and does not require specialized and expensive [illegible]. Most well equipped laboratories or practitioners [illegible] own the necessary implements. In the following [illegible]pter, the best measurements needed to do this method of [illegible] assessment are discussed, and the formula is given.

[illegible]

[illegible] uremen [illegible] ondardi [illegible] un t [illegible] fon it, [illegible] groups, [illegible] inable

<u>Variable Resul[illegible]</u>

[illegible] represented both [illegible] and newly derived calcula[illegible] femurs of blacks and whites. [illegible] elucidate the variability between the groups [illegible] show the need for using multiple variables [illegible] te and quantify those differences. This rese[illegible] ate to improve on both weaknesses. In addition, [illegible] larger sample provided more accurate simple statistic information for the population than before. Table [illegible] provides variable statistics of the entire sample, and Table [illegible] shows the means and standard deviations of each group, [illegible] well as those of the total population for comparison

VARIABLE	MEAN	STD.DEV.	STD.ERR.	MAX	MIN	MEDIAN
SEX	1.47	0.50	0.03	2.0	1.00	1.00
AGE	3.17	1.36	0.07	8.00	1.00	3.00
PMAX	452.83	31.37	1.73	539.00	378.00	453.30
ROBL	448.52	31.42	1.73	532.0	365.00	448.00
RELCON	79.26	6.44	0.36	89.00	65.00	79.00
RAPMID	29.09	[illegible]	0.16	37.0	18.30	[illegible]
RTRMID	25.90	2.80	0.15	33.60	17.20	25.90
RAPSUB	29.00	2.84	0.16	37.40	20.70	[illegible]
RTRSUB	30.82	2.86	0.16	38.60	20.70	[illegible]
BR1	0.17	3.33	0.17	[illegible]	9.8	[illegible]
BR2	4.83	3.91	[illegible]	6.70	-18.00	[illegible]
BR3	1.87	3.81	0.21	[illegible]	[illegible]	1.9
RPROX	5.10	2.19	[illegible]	10.60	-1.41	[illegible]
RBSIS	16.30	5.05	[illegible]	36.00	[illegible]	[illegible]
RBPROX	19.93	6.50	0.36	47.70	[illegible]	[illegible]
RTORS	3.63	[illegible]	0.16	6.0	[illegible]	3.3
LMAX	452.40	31.68	1.73	[illegible]	373.0	[illegible]
LOBL	448.67	[illegible]	1.73	[illegible]	[illegible]	[illegible]
LRLCON	[illegible]	6.25	0.34	[illegible]	[illegible]	[illegible]
LAPMID	27.68	2.69	[illegible]	[illegible]	18.60	[illegible]
LTRMID	24.11	[illegible]	0.16	[illegible]	[illegible]	[illegible]
LAPSUB	29.17	3.16	0.17	39.1	[illegible]	[illegible]
LTRSUB	30.69	2.84	0.16	[illegible]	[illegible]	[illegible]
LR1	0.11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LR2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LR3	[illegible]	3.64	[illegible]	[illegible]	[illegible]	[illegible]
LPROX	[illegible]	1.99	[illegible]	[illegible]	[illegible]	[illegible]
LBSIS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LBPROX	19.86	6.85	0.38	43.5	[illegible]	[illegible]
LTORS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

VARIABLES	MEAN WHITE	MEAN BLACK	MEAN TOTAL	STANDARD DEVIATION WHITE	STANDARD DEVIATION BLACK	STANDARD DEVIATION TOTAL
RMAX	[illegible]	[illegible]	[illegible]	9.78	31.50	31.36
ROBL	441.55	[illegible]	447.67	29.61	31.94	[illegible]
RBICON	79.42	[illegible]	[illegible]	[illegible]	6.18	[illegible]
RAPMID	27.89	[illegible]	[illegible]	[illegible]	2.78	[illegible]
RTRMID	[illegible]	25.76	[illegible]	[illegible]	[illegible]	[illegible]
RAPSUB	28.84	28.92	28.88	[illegible]	[illegible]	[illegible]
RTRSUB	30.88	30.68	[illegible]	[illegible]	[illegible]	[illegible]
RR1	-0.39	0.77	0.13	[illegible]	2.82	[illegible]
RR2	-5.88	-3.53	[illegible]	[illegible]	3.67	[illegible]
RR3	0.33	[illegible]	1.84	[illegible]	3.55	[illegible]
RPROX	[illegible]	5.47	5.13	[illegible]	2.19	[illegible]
RBDIS	14.60	18.22	16.23	[illegible]	[illegible]	[illegible]
RBPROX	18.52	21.41	19.87	[illegible]	6.59	[illegible]
RTORS	3.91	3.19	3.59	[illegible]	[illegible]	[illegible]
LMAX	445.80	[illegible]	452.62	9.69	[illegible]	[illegible]
LOBL	[illegible]	456.79	448.90	[illegible]	31.40	[illegible]
LBICON	79.04	78.17	78.65	6.51	[illegible]	[illegible]
LAPMID	27.57	27.71	27.63	2.40	[illegible]	[illegible]
LTRMID	[illegible]	[illegible]	26.12	[illegible]	2.71	[illegible]
LAPSUB	29.05	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LTRSUB	[illegible]	30.71	30.75	2.94	[illegible]	[illegible]
LR1	0.12	1.18	0.46	2.99	[illegible]	[illegible]
LR2	-5.73	-3.18	-4.59	[illegible]	[illegible]	[illegible]
LR3	0.07	3.08	1.42	3.34	[illegible]	[illegible]
LPROX	4.95	[illegible]	[illegible]	1.95	2.02	[illegible]
LBDIS	[illegible]	17.86	[illegible]	4.74	5.32	[illegible]
LBPROX	[illegible]	21.03	[illegible]	[illegible]	7.10	[illegible]
LTORS	4.02	3.17	3.64	3.04	3.03	[illegible]

[illegible]e maximum a[illegible] [illegible] greater in bl[illegible] [illegible] [illegible] though shor[illegible], [illegible] descr[illegible] [illegible] an black [illegible] [illegible]ondy[illegible] [illegible]. However, [illegible] ante[illegible] diameter measure[illegible] [illegible] including the pil[illegible] [illegible] shape, [illegible] significant, [illegible]

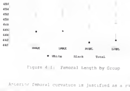


Figure 4.1. Femoral Length by Group

Anterior femoral curvature is justified as a [illegible] [illegible]guishing characteristic. The measurements [illegible] [illegible]r femoral curvature showed striking differences [illegible] the groups. Table 4.3 provides the T-tests [illegible] [illegible] which indicates the statistical significance [illegible] [illegible]

[illegible] Results [illegible]
[illegible]stical Signi[illegible]

VARIABLE	F-VALUE	2-TAIL	POOLED VARIANCE ESTIMATE T-VALUE	DEG OF FREE	2-TAIL PROB
RMAX	1 10	531	-4 28	327	000
ROBL	1.15	377	-3.89	327	.000
RRICON	1 17	325	1 50	327	134
RAPMID	1.03	865	-0 76	327	448
RTRMID	1 07	692	0.58	327	560
RAPSUB	1 40	014	0.12	327	907
RTRSUB	1.26	144	0.59	327	.558
RR1	1 08	627	-3 21	327	001
RR2	1.01	933	-5 30	327	000
RR3	1 07	646	-8 38	327	000
RPROX	1 06	725	-2.42	327	016
RRDIS	1.01	961	6.19	327	.000
RHPROX	1 08	637	-3 58	327	000
RTORS	1.35	.056	2 20	327	028
LMAX	1 16	335	-4 88	333	000
LOBL	1 16	335	-4.58	332	000
LRICON	1 10	851	1.24	331	.216
LAPMID	1 10	526	-0 70	333	484
LTRMID	1.26	.140	0.48	333	633
LAPSUB	1 36	.054	-0 50	332	619
LTRSUB	1 18	305	0.25	332	801
LR1	1 18	.282	-3.71	332	000
LR2	1 01	835	-5 83	332	000
LR3	1 01	.862	-7.94	332	000
LPROX	1 11	.492	-3 21	332	001
LRDIS	1 21	.212	-5 50	332	000
LHPROX	1 13	440	-2 68	332	.008
LTORS	1 08	615	2 96	332	003

[illegible]

[illegible] demonstrated group means that deviate from the sample mean by a [illegible]. Blacks are consistently above the [illegible] and whites [illegible] below the mean. That [illegible] the [illegible] bones come closer to the table (less distance) than those of the other group. The mean for whites in the [illegible] quarter measure was -.39 on the right and -.12 on the left, while blacks had a mean of .77 on the right and 1.18 on the left, with group differences of 1.16 and 1.30. The differences are 1.03 and .84 over the total sample means. Similar results were obtained from the one half and three quarter measures, with group differences of 2.35 (right) and [illegible] (left) for the former and considerable 3.35 (right) and [illegible] (left) for the latter. The measures made at the proximal end of the femur had less of a group difference between the means, with only .62 for the right side and [illegible] for the left. The group proximal means were closer to the [illegible] means as well. Figure 4.2 graphically illustrates the variations of each group around the population mean.

[illegible] measurements from the bone to the block also [illegible] some variation between blacks and whites. The [illegible] between the means were around three for both the [illegible] and proximal measures on both femurs. In addition, [illegible] were equally distant from the total variable

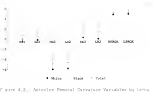


Figure 4.2 Anterior Femoral Curvature Variables by Group

groups. While whites had lower means for both block variables, the mean for the torsion variable was greater for whites than for blacks. This would indicate that there is less of a torsion for blacks than whites.

Age was grouped into three categories in order to make it a noncontinuous variable. AGE1 included those under the age of thirty, AGE2 were thirty to sixty, and AGE3 were over sixty. Not only did this create categories for easier statistical analyses, but also for easier skeletal application. The anthropologist merely has to have a rough idea of the age to proceed with the estimation.

The variables alone provided significant indications of the degree of torsion of the femur. However, the discriminant function analysis was able to provide simple

[illegible]
formula is pro[illegible]

Discriminant Function Analysis

The statistical program used was step-wise discriminant function analysis. The variables were selected to minimize Wilks' λ, with a minimum tolerance of .001 for inclusion. The analyses of both femurs took sixteen steps to derive the coefficients needed to classify accurately the groups.

All variables except the subtrochanteric antero-posterior diameter and the calculated torsion measurement were used. Apparently, the proximal and distal distance-to-block measures were adequate to describe the variation of the torsion of the femur. The maximum variability between the races can only be determined from the entire femur rather than a few select indicators.

The age variable chosen by the program was AGE1, or under thirty. All individuals over the age of thirty were assigned a zero, while those under that age received a one. These numbers were multiplied to the coefficient to include in the formula. An example of the methodology will be presented later.

Classification was achieved by assigning scores for each case. The discriminant scores were calculated with the variables and the unstandardized canonical coefficients. Each femur was treated as a separate case. While using both femurs would be useful in verifying the results, it is not

[illegible]

Table [illegible] Discriminant Function [illegible]
Right Femur

Variable	**Coefficient**
Maximum Length (RMAX)	05616
Oblique Length (ROBL)	- 05128
Bicondylar Breadth (RBICON)	17654
Antero-posterior diameter--Midshaft (RAPMID)	.12429
Transverse diameter--Midshaft (RTRMID)	09677
Subtrochanteric transverse diameter (RTRSUB	09223
1/4 Shaft distance from table (RR1)	05108
1/2 Shaft distance from table (RR2)	-.04478
3/4 Shaft distance from table (RR3)	.15911
Proximal distance from table (RPROX)	06127
Distal distance from block (RBDIS)	19848
Proximal distance from block (RBPROX)	- 11947
Sex (SEX)	-.62248
Age (AGE1)	2 04084
Constant	98848

The black scores were calculated as positive, while whites were negative. The dividing point between the groups was 0. Those above the point (positive) were classified as black, while those below that point (negative) were

Table [illegible] Discriminant [illegible] Coefficients [illegible] Femur

Variable	Coefficient
Maximum Length (LMAX)	.11350
Oblique Length (LOBL)	-.10512
Bicondylar Breadth (LBICON)	-.19943
Antero posterior diameter--Midshaft [illegible]	[illegible]
Transverse diameter--Midshaft (LTMSH)	[illegible]
Subtrochanteric transverse diameter [illegible]	[illegible]
1/4 Shaft distance from table (LR1)	-.10236
[illegible] Shaft distance from table (LR2)	[illegible]
3/4 Shaft distance from table (LR3)	[illegible]
[illegible]mal distance from table (LPROX)	[illegible]
[illegible]al distance from block (LBDIS)	[illegible]
[illegible]mal distance from block (LBPROX)	[illegible]
[illegible] (SEX)	[illegible]
Age (AGE1)	[illegible]
Constant	[illegible]

[illegible] as white. The group centroids for each limb are listed in Table 4.6. Figure 4.3 is the scattergram for the right femur, and Figure 4.4 is that of the left femur.

Table 4.6 Group Centroids

RIGHT FEMUR			LEFT FEMUR		
	GROUP	FUNCTION 1		GROUP	FUNCTION 1
1	White	[illegible]	1	White	-1.12118
2	Black	1.76551	2	Black	1.37488

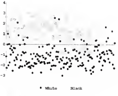


Figure 4.3. Scattergram for Discriminant Scores
Right Femur

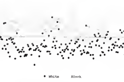


Figure 4.4. Scattergram for Discriminant Scores
Left Femur

[illegible] were more [illegible]ten misc[illegible] [illegible] 4.2% on the right, [illegible] [illegible]rectly grouped, [illegible] [illegible] the variables, inc[illegible]

[illegible]ssification can be [illegible] [illegible]orically racial [illegible] Americans have [illegible] 30% [illegible] genes. [illegible] incorrec[illegible] shadows that fi[illegible] In add[illegible] have some [illegible], although not as much as [illegible]. Therefore, some inaccuracy is to be [illegible]pected.

[illegible] were tested with the skeletal collections [illegible] [illegible] University Department of Geography [illegible] Anthropology [illegible] Laboratory and the First African Baptist [illegible] [illegible]iladelphia. The results were noteworthy: Tables 4.7 and 4.8 give the calculated discriminan[illegible] for each femur, as well as the ra[illegible] determined from [illegible] scores for the LSU collection and [illegible] First ABC collection respectively. The actual ra[illegible] included to demonstrate the accuracy. Misclassifications are indicated by a double star following the actual ra[illegible]

Table [illegible] Sample Results
[illegible]ana State [illegible]ity Forensic Co[illegible]

[illegible]	R[illegible] [illegible]		LEFT FEMUR		ACTUAL R[illegible]
	[illegible]ORE	[illegible]	SCORE	RACE	
[illegible]	[illegible]	[illegible]	1.20	B	B
[illegible]	-1.[illegible]	[illegible]	N/A	N/A	W
[illegible]	[illegible]	[illegible]	-[illegible] 46	W	W
[illegible]	[illegible]	B	3.17	B	B
[illegible]	[illegible]	W	-0 07	W	W
[illegible]	[illegible]	B	[illegible] 5[illegible]	B	W**
[illegible]	[illegible]	B	0 40	B	W**
[illegible]	[illegible]	B	1 86	B	W**
[illegible]	[illegible]	B	[illegible] 69	B	B
[illegible]	[illegible]	N/A	2.4[illegible]	B	W**
[illegible]	[illegible]	N/A	0 7[illegible]	B	W**
[illegible]	[illegible]	B	1.0[illegible]	B	B
[illegible]	[illegible]	N/A	[illegible].08	B	B
[illegible]	[illegible]	W	-1.53	W	W
[illegible]	[illegible]	W	-[illegible] 65	W	W
[illegible]	[illegible]	W	-1 74	W	W
[illegible]	[illegible]	B	-0 31	[illegible]	[illegible]
[illegible]	[illegible]	W	-0 92	W	[illegible]
[illegible]	[illegible]	W	0 15	B	[illegible]
[illegible]	[illegible]	B	2.5[illegible]	B	B

[illegible] [illegible]ASSIFIED RACE, W--WHITE, B--B[illegible]

Table 4 [illegible] Test Sample Results
First African Baptist Church Historical [illegible]

TEST CASE #	RIGHT FEMUR		LEFT FEMUR		ACTUAL RACE
	SCORE	RACE	SCORE	RACE	
FABC F1	3.53	B	3.46	B	B
FABC F2	1.07	B	2.62	B	B
FABC F3	0.54	B	0.97	B	B
FABC F4	2.72	B	3.31	B	B
FABC F5	2.22	B	2.02	B	B
FABC F6	2.60	B	3.20	B	B
FABC F7	0.87	B	1.98	B	B
FABC F8	1.37	B	1.28	B	B
FABC F9	0.50	B	N/A	N/A	B
FABC F10	1.92	B	5.03	B	B
FABC F11	N/A	N/A	1.08	B	B
FABC F12	N/A	N/A	0.71	B	B
FABC F13	N/A	N/A	1.88	B	B
FABC F14	N/A	N/A	5.09	B	B

LEGEND **--MISCLASSIFIED RACE; W--WHITE; B--BLACK

As can be seen from the above tables, the results obtained by the formula were 75% accurate. This is slightly lower than the results from the study, which is as anticipated. All of the cases from the First African Baptist Church were classified correctly. Less white admixture in the blacks of the mid nineteenth century is the most probable cause for the increase in accuracy.

[illegible] data were [illegible] s. Further [illegible] individuals possibly had some racial admixture [illegible] Louisianans are of mixed ancestry, but claim [illegible] their race. Therefore, while the femur places them in one category, they placed themselves in another. All in all, the femur as a classification tool is shown to be useful.

Forensic Applications

The investigator can now easily determine race from postcranial remains with reasonable accuracy. The materials necessary are readily available, and include blocks and metric dial calipers. When using this method, however, a few simple procedures must be remembered.

The age and sex of the remains must be decided prior to determining the race. Provided more elements than the femur are available this task should be simple. Even if only a femur is available, many methods exist to easily determine these data. Age has to be determined to over or under thirty years, an easy task for even a novice. The age variable is assigned a one for under thirty and a zero for over thirty. Males are assigned a one for the sex variable, while females get a two. These numbers are calculated into the formula.

Anything can be used for the blocks, such as wood, brick or books. The only criteria are that both blocks be equal in size, and they be a minimum of 20 mm high. Simply

[illegible] prior [illegible] proceeding, and subtract [illegible] the [illegible] the variables

[illegible] measurements of the femur on the [illegible] including the maximum length (MAX) [illegible], and the bicondylar breadth (BICON) [illegible] the femur into three equal [illegible] length, one-half length, and [illegible] each point at the end of each segment [illegible] femoral curvature measures to be made on the [illegible]

Diameter measurements are made from the anterior (APMID) and lateral (TRMID) surfaces at the midshaft, and the lateral surface at the subtrochanteric level (TRSUB) [illegible] transverse diameter is determined at each point with the calipers perpendicular to the table By turning the femur [illegible] the condyles are exactly perpendicular to the table, [illegible] posterior diameter is made

[illegible], the femur should be placed on the two blocks, [illegible] the anterior side of the bone facing the table. Be [illegible] femur is correctly positioned The head and [illegible] trochanter will rest completely on one block At [illegible] end, the lateral condyle will also contact the [illegible], while the medial condyle is raised

The measures are made with the dial calipers from the [illegible] to the points previously determined Record each [illegible] with its appropriate variable designation: R1, [illegible] quarter length; R2, one-half length; R3, three-quarter

[illegible]

[illegible] imal [illegible]

[illegible] as [illegible] formula. Race [illegible] decided based [illegible] score. Again, if [illegible] is over [illegible] most likely black, [illegible] 0, whi[illegible] non-metric analysis [illegible] useful for [illegible]boration.

One prevailing problem is that the femur must be mostly complete to utilize this formula. Bones missing just medial [illegible] lateral epicondyles or condyles, or portions of the [illegible]chanters, are useable. However, those missing parts that [illegible] interfere with obtaining measures should be rejected. [illegible] studies should rectify this deficiency. This study [illegible] a current gap in forensic identification which can [illegible] be improved in time.

CHAPTER [illegible]

THEORY OF [illegible]

[illegible] first theory [illegible] femoral [illegible] length [illegible] believed [illegible] femoral [illegible] inherent [illegible] the growth [illegible] elements [illegible] ancestry, and climatic [illegible] that modify [illegible] length seemed to [illegible] associated with [illegible].

Gilbert's [illegible] hypotheses, as discussed in an [illegible], were all based on Native American remains. [illegible] the theories each in turn by showing examples of [illegible] that should have been different, yet were not, and [illegible]. Allen's rule of regional differences was specifically dismissed based on two populations of prehistoric Native Americans from similar environments. Gilbert's final explanation was related to body weight acting on the bone, although his sample was extreme. The true reason for anterior femoral curvature lies somewhere between the results of the other researchers

[illegible] rage v[illegible] [illegible] ividual [illegible]

[illegible] tal [illegible] While [illegible]orphic systems [illegible] do not e[illegible] s from the envi[illegible] (sic) are gre[illegible] Human[illegible] altered a wide [illegible] out time [illegible], both cultur[illegible] and geographic[illegible] on resulted [illegible] divergence. Variation in bod[illegible] due to [illegible] readily be seen in living and [illegible] humans [illegible] 1981).

Human Limb Structure and Locomotion

[illegible] have generalized limbs, even though most have adapted [illegible] life. Humans have the general primat[illegible] characteristics, but with a reduction of the forelimb and [illegible] specialization of the hindlimb for bipedalism. The proximal

[illegible] limbs [illegible] [illegible] [illegible] wide range of [illegible] [illegible] and knee) are adapted [illegible] [illegible] [illegible]gated at the pro[illegible] [illegible] with less mus[illegible] [illegible] and are thus [illegible]

[illegible] [illegible] [illegible]ture gives [illegible] evidence [illegible] [illegible] prima[illegible] [illegible]ck of the [illegible] [illegible] other primates, increas[illegible] [illegible] [illegible] human [illegible] [illegible] bipedal[illegible] [illegible] and [illegible] [illegible] the muscles.

[illegible] upright walking [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] The [illegible] [illegible] an abductor [illegible] [illegible] the acetabulum [illegible] All the changes a[illegible] [illegible] development [illegible] [illegible]alism (Campbell, [illegible]

[illegible] [illegible] [illegible] limb motion [illegible] [illegible] simultaneously maintaining

[illegible] (Perry, 1992, [illegible]). During forward [illegible], one leg [illegible] and the other moves [illegible] [illegible] jobs. A gait [illegible] one leg. Swing [illegible] advancement, and [illegible] the ground. [illegible] Double stance, [illegible] is about to [illegible] foot is in the [illegible] on one leg [illegible] double [illegible] of the cycle [illegible] of the gait [illegible].

Weight acceptance [illegible] cycle during [illegible] the body weight [illegible] limb to the [illegible]. This task is [illegible] instability [illegible] accepting leg [illegible] swinging forward. The single limb support, [illegible] is lifted, [illegible] the other limb supporting [illegible] weight [illegible] forward movement, the body [illegible] briefly as stable as during passive standing [illegible], the body weight is precarious, [illegible] for muscular intervention (Perry, 1992).

Muscular function in bipedalism [illegible] quadrupedal locomotion. The [illegible] iliopsoas and rectus femoris, and [illegible] adductor magnus and biceps femoris. The [illegible] contracts to start the thigh in [illegible]

[illegible] hamstri[illegible] g by [illegible] [illegible] a compl[illegible] [illegible] ...leus is [illegible] bipedal locomotio[illegible]

Climate and Limb Proportion

[illegible] ...ing humans, vary in [illegible] a geog[illegible] "Protruding body par[illegible] ears, [illegible] ...es, and so forth, [illegible] ...vely [illegible] cooler parts of the ra[illegible] ...ts" (Coon, 19[illegible]2, p[illegible] [illegible] found in cold [illegible] [illegible] ...g in low [illegible]

[illegible] limbs a[illegible] dissipate heat [illegible] extremities [illegible] dissipation by [illegible] to the [illegible] as well [illegible] to generate [illegible]

[illegible] seem [illegible]
an[illegible], 1972).

[illegible] who are indigenous [illegible] and shorter [illegible]. [illegible] reduces surf[illegible] reducing heat [illegible] and les[illegible]er bodies [illegible] efficiently [illegible].

[illegible] adapting to colder [illegible], but poor fossil e[illegible] [illegible]. A better fossil [illegible] leads to direct evidence [illegible] [illegible], 1984). Neandertal had relative[illegible] [illegible] segments relative to the proximal bones [illegible] related to the loss of limb length to minimize th[illegible] [illegible]ce area of the extremities, thus reducing heat loss. [illegible] factor would be expected in the populations in Europe [illegible] the last glaciation. Comparisons of the crural and [illegible] indices of recent populations from different [illegible] backgrounds correlate with the expected rules of [illegible] and limb length. Neandertals show a distinct [illegible] adaptation to cold, while anatomically modern [illegible] more closely related to warm adapted ancestors [illegible], 1984).

[illegible] changes over a long period are seen as [illegible] changes population-wide. Studies have borne [illegible] theory in respects to modern humans, despite

[illegible] While [illegible] ation, [illegible] [illegible] by gene [illegible]

[illegible] caused by env[illegible] are still [illegible], 1966). Climate [illegible] documented. The [illegible] related [illegible] body weight [illegible] early demonstrated [illegible] modern [illegible]

[illegible] by [illegible] import[illegible] 1969).

[illegible] differs between populations [illegible] fication than whites, [illegible] The divergence appears [illegible] genes that control growth, which

[illegible]

[illegible] evident [illegible]. The [illegible] both [illegible] those of white [illegible] relati[illegible]. In addition, the lower porti[illegible] relative to the upper segment [illegible]. "In general, the proportion [illegible] limb to [illegible] so much from one population [illegible] another, [illegible] by genetic programming, [illegible] certainly not" (Tanner, 1966, p [illegible]

<u>Biomechanics and Limb Curvature</u>

[illegible] mechanical theory has been applied to the limb [illegible] leg, of bipedal humans to demonstrate the most energ[illegible] design. The bones and tendons must maintain a particular distribution in order to withstand the force [illegible] to the leg while walking (Witte, Preuschoft, and [illegible], 1991). Diaphyseal morphology is a combined [illegible] of genotype and biomechanical stress (Trinkaus, [illegible]). Bone is very malleable, especially in response to [illegible] loads and other environmental pressures. This [illegible] plasticity. Plasticity is phenotypic, not being [illegible] by the genetics of the individual or population in [illegible] it appears (Hughes, 1968).

Bone reacts to stresses applied to it. Loads are [illegible] forces acting on the bones. Stresses, the forces

[illegible]

[illegible] feedback [illegible] to [illegible]

[illegible] types of forces [illegible] of deformation [illegible] from the ends [illegible] of the bone [illegible] impa[illegible] causes it to [illegible] stresses [illegible] ing points [illegible] These [illegible] deformation [illegible] applied in one d[illegible] opposing direction [illegible] bending As the nam[illegible] of the bone Torsio[illegible] of these forces or s[illegible] react in extraordinar[illegible]

Stresses dictate [illegible] shape for multidimensional [illegible] including [illegible] hollow cylinder Because [illegible] would buck[illegible] easily, the walls must be [illegible] mass This is best accomp[illegible]

[illegible]under [illegible] trabecu[illegible] [illegible]rey, [illegible]

[illegible]dore [illegible]ively [illegible] [illegible] economy is greater [illegible] support loads. The [illegible] by the shape and stru[illegible] [illegible] Pauwels, [illegible] The shaft of the femur [illegible] [illegible]ened to a tube under [illegible] duress of bending and tor[illegible] [illegible]ss while walking, brought about by body weight, [illegible]ular propulsion and inertia (Trinkaus, 1976).

Greater loads effect greater stresses to bala[illegible] [illegible] which are handled by an increase in material at [illegible] [illegible] of largest stress. The position of the load al[illegible] determines the type of stress. A load that is in line w[illegible] the axis of the material will produce compression stress[illegible] equally throughout. A slight shift in the load creates [illegible] stress of exponential difference at the area of direct loading.

Shifting the load also creates a bending stress, wh[illegible] causes compressive stress on one side of the cross section and tensile stress on the other. These stresses could be handled by an overall increase in the amount of material[illegible] [illegible] the weight and energy costs would also increase. In [illegible]try and machinery, the bending stress can be reduced [illegible] [illegible] ways without increasing the amount of material [illegible]ering the lever arm of the load can be effective. The

[illegible] limbs of locomotion [illegible] relief are not always [illegible] directly parallel [illegible] placed idiosyn[illegible] equilibrium is main[illegible] the axis, the bone [illegible]. Bending stress is [illegible] [illegible]ous to the bone than compre[illegible] (Pauwel[illegible] [illegible]).

[illegible] effective example of bone re[illegible] to relie[illegible] the linea aspera. Often seen as a ridge called [illegible], the linea aspera is the insertion site of the [illegible] adductor muscles (adductor brevis, longus, and magnus [illegible] as pectineus). Pilastry is the structure that [illegible]ces the bone against anteroposterior stress. The [illegible] appears to be related to the size, and thus the [illegible]gth and force, of the quadriceps in the anterior [illegible]ment of the thigh. The greater the force of the [illegible], the more pronounced the pilaster.

[illegible]ther way of counteracting bending stress by material [illegible] is demonstrated by the cross-sectional shape of [illegible] femur. Most of the bending stress is mediolateral, but some is anteroposterior. Maximum stress on the femoral shaft is on the lateral aspect at the subtrochanteric level near the gluteal tuberosity, which is under tension. The [illegible]atest stress on the medial side is at the proximal third [illegible] the shaft. In cross-section, the placement of the

[illegible]

[illegible] demonstrated [illegible] bundle [illegible] as a [illegible] al [illegible]

[illegible] ing [illegible] increasing [illegible] the [illegible] femur [illegible] upon which [illegible] acts, [illegible]. It effectively opposes [illegible] the femoral shaft during the [illegible] (Ruff [illegible], 1976; Pauwels, 1980).

[illegible] bending, the curvature of [illegible] anterior femoral [illegible] tal plane aids in [illegible] caused by the body weight in

[illegible] the shaft of the femur during the [illegible] phase of walking

> The stress lowering effect of the curved [illegible] particularly great if, as in the femur, [illegible] muscles work simultaneously, because the [illegible] shortens the body weight lever arm, and at [illegible] time, lengthens the counterbending lever [illegible] biarticular muscle. (Pauwels, 1980, p 182)

[illegible] body weight shifts forward over the support [illegible] the stance phase of locomotion, the limb is stressed [illegible] compression and bending An erratic positioning of the [illegible] weight relative to the long axis of the femur creates an [illegible]nclination that effectively increases the length of the lever arm acting on the limb. The stresses are thus [illegible]reased proximal to distal Biarticular muscles, [illegible]uding the hamstrings, act in tension to partly reduce [illegible] bending stress, although they do tend to increase the [illegible]pressive forces Anterior curvature of the femoral shaft [illegible] reduces the stress by aligning the axis closer to [illegible] or the load and thereby shortening the lever arm by [illegible] the load acts on the bone (Pauwels, 1980).

The morphology of the femur is a testimony to how [illegible]chanics dictates structure When the limb is in the [illegible] support phase of locomotion, the femoral neck causes [illegible] to tilt away from the support. The abductors are tension bands which torque the hip back towards the support Compressive forces of the femoral neck act with a shorter lever arm than the load alone, which lessens the bending

[illegible] Immed[illegible] [illegible] lo[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]stment [illegible] amount [illegible] material (Pauwels, [illegible]).

Populational [illegible]

The possible [illegible] femur are most [illegible] femurs relative to [illegible] which traverse the [illegible] length. Length [illegible] femoral curvature [illegible]

As Homo sapiens move[illegible] colder [illegible] the femur shortened, as per [illegible]'s rule. [illegible] bone length also shortened the length of [illegible] [illegible] thereby compromising [illegible] effecti[illegible] [illegible], walking became less [illegible] [illegible] [illegible] [illegible]ated by anterior femoral [illegible] anterior curve, the surface area [illegible] [illegible]. Much as the patella [illegible] length of the anterior muscles made locomotion [illegible] [illegible]

[illegible] body, [illegible] the muscle [illegible] Europea[illegible] length that recess[illegible]

The anterior curvatu[illegible] femur. The muscle a[illegible] away from direct downward t[illegible] material, therefore, [illegible] deformity. Although the femurs [illegible] slightly [illegible] slender, reducing the overall w[illegible] ture is [illegible] same as in whites.

African-Americans are new [illegible] evolutionarily speaking. Cultura[illegible] with barely three hundred years in a more temperat[illegible] equatorial Africa, blacks have not had time t[illegible] the selection pressures suff[illegible] to modify gen[illegible] traits. The population does, however, have an average of 30% genet[illegible] mixing with Europeans. Therefore, the between-population variations are not as clear [illegible] ideal model would predict. Racially distinguishing features do exist, and anterior femoral curvature is one of those varying traits.

[illegible] popula[illegible], but more [illegible] [illegible] the bo[illegible] on a [illegible] [illegible] exists [illegible] of gener[illegible] [illegible]ment [illegible] increas[illegible] [illegible] upon which t[illegible] [illegible] ted to the [illegible]

[illegible] human [illegible] of the [illegible]alism [illegible] di[illegible] [illegible] development. [illegible] anthropologis[illegible] presented to them

[illegible]

[illegible] make [illegible] identi[illegible] person's [illegible] race. [illegible] the forensi[illegible] anthrop[illegible] se by society [illegible] anthropolo[illegible] ation [illegible] en dea[illegible] forensic[illegible]. The[illegible] reasonabl[illegible] race [illegible] bones are [illegible].

[illegible]ysis of the [illegible] ting race. [illegible] documented on[illegible]. No simila[illegible] method for assessme[illegible] proposed. Most [illegible] the use of seve[illegible] accurate analy[illegible]. The femur[illegible] anterior [illegible] ture, has been [illegible] projects. The [illegible] between [illegible] method [illegible] utiliz[illegible] ing [illegible] individuals into [illegible].

[illegible]
[illegible], from t[illegible] [illegible]
[illegible] project d[illegible]
[illegible]ure [illegible]
[illegible]
[illegible]
[illegible] instruments [illegible] available
[illegible]tory. T[illegible] simpl[illegible]
[illegible] This [illegible] improv[illegible]
[illegible] of post[illegible] race ass[illegible]

[illegible] to be useful for determ[illegible]
[illegible] minant [illegible]
[illegible]plied [illegible] he variable m[illegible]
[illegible] This [illegible]
[illegible] to plac[illegible] race category. The
[illegible] race [illegible] right femur, and [illegible]
[illegible] he left [illegible] verlap of variation was [illegible]
[illegible] within the groups, b[illegible]
[illegible]al measurements is achie[illegible]

[illegible] anterior femoral curvature [illegible]
[illegible] the question of why the trait
[illegible] influenced the morpholog[illegible]
human leg [illegible] all groups. The variat[illegible]
the fem[illegible] groups can be attributed [illegible]
climate i[illegible] volved. Migration,
[illegible] merged the femur sufficien[illegible]
[illegible] racial [illegible] addition, the changes to th[illegible]

[illegible] biomech[illegible]

[illegible] influ[illegible]

[illegible]

[illegible] While [illegible] debat[illegible] continu[illegible] their [illegible] This new [illegible]nique will help them t[illegible]

APPENDIX B

RESEARCH SAMPLE DATA

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		1	[illegible]							
[illegible]	[illegible]		1	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M12	6A82		1	[illegible]	446	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M13	12B83		1	1	430	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]
M14	6A84		1	6	478	[illegible]	92.0	36.0	[illegible]	[illegible]	[illegible]
M15	11A90		1		[illegible]	[illegible]	71.0	26	[illegible]	[illegible]	[illegible]
M16	12AP		2		[illegible]	1[illegible]0.0	80.0	30	[illegible]	[illegible]	[illegible]
[illegible]	12B[illegible]		1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M18	[illegible]		1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M21	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M23	12D[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M24	4B9[illegible]		1		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M25	2A[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M26	11C[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M28	[illegible]			1	40[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			3	45[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1	1	3	46[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		2	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		2	1							
[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]			[illegible]							
F23+	[illegible]		2								
M3	1[illegible]			4	454.0	449.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M38	6[illegible]		1	4	476.0	470.0	98	[illegible]	[illegible]	[illegible]	[illegible]
M39	[illegible]		2	1	446.0	442.0	76	[illegible]	[illegible]	[illegible]	[illegible]
M40	9		1	2	463.0	458.0	78	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1: Continued

CASE	NUMBER	SEX	RACE	AGE	RMAX	AOHL	RBICON	RAPMID	RTRMID	RAPSLR	RTRSLR
M41	592	1	2	2	470.0	463.0	82.0	25.9	27.8	32.2	[illegible]
M42	594	1	2	2	495.0	431.0	87.0	25.8	30.2	[illegible]	[illegible]
M43	595	1	2	2	504.0	500.0	82.0	27.9	[illegible]	[illegible]	[illegible]
M44	641	1	1	3	441.0	438.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M45	645	[illegible]	1	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M46	696	[illegible]	1	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M47	718	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M48	719	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M49	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M55	859	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M56	897	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M57	876	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M58	881	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25.2	26.0
M66	1183	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	28.3	31.4
[illegible]	554R	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M68	561	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M69	[illegible]	[illegible]	[illegible]	1	[illegible]	405.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M70	[illegible]	[illegible]	[illegible]	1	403.0	398.0	68.0	[illegible]	[illegible]	[illegible]	[illegible]

Table [illegible] Continued

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	75[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M74	745R	[illegible]	[illegible]	[illegible]	[illegible]	126.0	76[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	800R	[illegible]	[illegible]	[illegible]	[illegible]	65.0	72[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M76	822	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M77	847	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M86	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M87	9[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M88	96[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M89	10[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M98	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	NUMBER	SEX	RACE	AGE	RMAX	ROBL	RBICON	RAPHIL	[illegible]	[illegible]	[illegible]
M10[illegible]	599	1	1	4	457.0	456.0	81.0	26.[illegible]	[illegible]	[illegible]	[illegible]
M102	675	1	2	2	475.0	472.0	87.0	[illegible]	[illegible]	[illegible]	[illegible]
M103	608	1	1	4	465.0	46[illegible].0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M104	621R	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M105	622R	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M106	654	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M107	660	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M108	47	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	503.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1	418.0	440.[illegible]	[illegible]	27.1	[illegible]	[illegible]	[illegible]
M11[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	476.0	470.[illegible]	[illegible]	33.6	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	537.0	532.[illegible]	[illegible]	32.9	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M116	1033	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M117	1068	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M118	1086	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M119	1089	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M120	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	84.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M12[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	74.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M127	41R	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M128	1599	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M129	162	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M130	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A-1. [illegible]

CASE	NUMBER	SEX	RACE	AGE	RMAX	ROL	ABICON	RAPMID	RTRMIC	[illegible]	[illegible]
M131	351	2	1	3	448.0	444.0	[illegible]	27.3	31.0	[illegible]	[illegible]
M132	405	2	1	3	394.0	390.0	72.0	26.1	21.8	[illegible]	26.6
M133	437	2	1	4	434.0	430.0	75.0	25.[illegible]	24.9	29.7	32.3
M134	1580	2	1	4	453.0	449.0	75.0	26.9	24.0	27.5	28.5
M135	541	2	2	2	482.0	[illegible]	[illegible]	[illegible]	[illegible]	29.4	32.[illegible]
M136	568	2	2	2	438.0	434.[illegible]	[illegible]	[illegible]	[illegible]	26.[illegible]	[illegible]
M137	627R	2	2	2	433.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M138	632	2	[illegible]	[illegible]	464.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M139	657	2	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M140	824	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M141	844	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M142	913	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	28.[illegible]
M143	994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30.[illegible]	31.0
M144	1006	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	26.[illegible]	27.7	29.3	29.3
M145	1076	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20.9	29.0	29.[illegible]
M146	1105	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20.8	30.5	27.[illegible]
M147	[illegible]122	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	27.2	21.8	27.[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	27.1	24.[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M154	1566	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M155	1572	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	27.[illegible]
M156	1594	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	27.5	29.[illegible]
M157	1614	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25.5	29.[illegible]
M158	1617	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	31.[illegible]
M159	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A [illegible]

CASE	NUMBER	SEX	RACE	AGE	RMAX	ROEL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M161	45R	1	1	3	454.0	451.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M162	113R	1	1	3	488.0	484.0	90.0	[illegible]	[illegible]	[illegible]	[illegible]
M163	128	1	2	1	461.0	459.0	86.0	[illegible]	[illegible]	[illegible]	30[illegible]
M164	129	1	2	1	444.0	443.0	81.0	[illegible]	[illegible]	[illegible]	[illegible]
M165	187R	1	1	2	433.0	431.0	71	[illegible]	[illegible]	[illegible]	[illegible]
M166	196	1	[illegible]	2	469.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M167	203	1	2	[illegible]	451.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M168	204	1	2	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M169	210	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M170	222	1	2	[illegible]	466.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M171	254	[illegible]	2	1	512.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M172	303R	1	[illegible]	3	494.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M173	[illegible]	1	1	2	439.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M174	[illegible]	[illegible]	[illegible]	1	460.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M175	335	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	22	[illegible]	[illegible]	[illegible]
M176	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29	[illegible]	[illegible]	[illegible]
M177	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	27	[illegible]	[illegible]	[illegible]
M178	468	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M179	422	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M180	423	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M181	465	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M182	1564	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M183	1569	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M184	1591	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M185	[illegible]	[illegible]	[illegible]	[illegible]	474.0	[illegible]	83	[illegible]	[illegible]	[illegible]	[illegible]
M186	[illegible]	[illegible]	1	[illegible]	441.0	477.0	86	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	494.0	493.0	96.0	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1	474.0	471.0	79.0	[illegible]	[illegible]	[illegible]	32
[illegible]	[illegible]	[illegible]	[illegible]	2	384.0	381.0	65	[illegible]	[illegible]	[illegible]	26
[illegible]	[illegible]	2	[illegible]	2	[illegible]	475	[illegible]	[illegible]	[illegible]	[illegible]	28

Table A 1 Continued

CASE	NUMBER	SEX	RACE	AGE	RMAX	ROBL	RBICON	RAPMIF	[illegible]	[illegible]	[illegible]
M191	256	2	1	5	390.0	386.0	75.0	24.0	[illegible]	[illegible]	[illegible]
M192	280	2	2	2	434.0	429.0	71.0	28.[illegible]	[illegible]	28	[illegible]
M193	304	2	2	2	442.0	437.0	77.0	[illegible]	26.2	29	[illegible]
M194	306R	2	1	5	455.0	450.0	76.0	27.1	23.3	24.[illegible]	[illegible]
M195	323	2	[illegible]	[illegible]	437.0	432.0	74.[illegible]	29.7	23.7	28.[illegible]	[illegible]
M196	346	2	1	5	400.0	[illegible]	74.[illegible]	23.[illegible]	23.4	24.[illegible]	[illegible]
M197	457	[illegible]	2	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30[illegible]	[illegible]
M198	373	2	1	5	421.0	[illegible]	76.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M199	482	2	1	5	421.0	41[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M200	1351	[illegible]	[illegible]	2	492.0	485.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M201	1353	2	1	5	400.0	394.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M202	1354	2	2	2	496.0	490.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M203	1434R	2	2	1	445.0	442.0	73.0	28[illegible]	[illegible]	[illegible]	[illegible]
M204	1500	2	[illegible]	2	431.0	426.0	71.0	26[illegible]	[illegible]	[illegible]	[illegible]
M205	1562	2	1	4	435.0	431.0	71.0	29.[illegible]	[illegible]	[illegible]	[illegible]
M206	574	[illegible]	[illegible]	4	4[illegible]7.0	474.0	74.0	29.[illegible]	[illegible]	[illegible]	[illegible]
M207	1608	[illegible]	[illegible]	4	[illegible]	44[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M208	1612	2	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M209	1507	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M210	1544	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M211	1553	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M212	1579	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M213	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M21[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	84.0	26.1	30.4	[illegible]	[illegible]
M21[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	427.[illegible]	72.0	30.5	24.6	28.[illegible]	[illegible]
M218	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	486.0	81.0	31.6	24.3	31.[illegible]	[illegible]
M219	13[illegible]	[illegible]	[illegible]	[illegible]	161.0	458.0	79.0	27.5	24.5	24.[illegible]	[illegible]
M220	30R	[illegible]	[illegible]	[illegible]	[illegible]	485.0	81.0	28.[illegible]	[illegible]	[illegible]	[illegible]

Table [illegible] (continued)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1	1	5	425.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1	1	3	388.0	[illegible]	[illegible]	[illegible]	[illegible]	33.3	[illegible]
[illegible]	[illegible]	1	1	3	453.0	479.0	81.0	[illegible]	[illegible]	[illegible]	[illegible]
M225	181	1	1	3	485.0	482.0	89.0	[illegible]	[illegible]	[illegible]	[illegible]
M226	197R	2	1	5	444.0	436.0	74.0	[illegible]	[illegible]	[illegible]	[illegible]
M227	198R	1	1	4	472.0	467.0	84.0	[illegible]	[illegible]	[illegible]	[illegible]
M228	208	2	2	3	441.0	437.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M229	225R	2	1	5	434.0	429.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M230	301R	1	1	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M231	348R	2	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M232	520	[illegible]	2	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M233	1396	2	2	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M234	[illegible]	1	2	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M235	1503	1	2	2	516.0	[illegible]	85.0	[illegible]	[illegible]	[illegible]	[illegible]
M236	1539	1	2	2	483.0	479.0	86.0	[illegible]	[illegible]	[illegible]	[illegible]
H1	320726	1	1	4	459.0	457.0	87.0	[illegible]	[illegible]	[illegible]	[illegible]
H2	320725	1	1	6	427.0	426.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H3	320738	1	1	5	469.0	468.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H4	320722	2	2	2	447.0	443.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H5	320740	1	1	3	437.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H6	320721	1	1	3	451.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H7	320736	1	1	6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H8	320739	1	1	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H9	320746	1	1	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H10	320719	1	[illegible]	5	455.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H11	320718	1	1	4	438.0	[illegible]	[illegible]	[illegible]	[illegible]	29.7	[illegible]
H12	320758	1	1	2	475.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H13	320742	2	1	4	446.0	439.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H14	320708	2	1	4	417.0	412.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A 1 Continued

CASE	NUMBER	SEX	RACE	AGE	RMAX	ROBL	RBICON	[illegible]	[illegible]	[illegible]	[illegible]
H15	320747	1	1	4	460.0	455.0	86.0	[illegible]	[illegible]	[illegible]	[illegible]
H16	320701	1	1	4							
H17	320704	1	1	3							
H18	320752	1	1	4							
H19	320710	1	1	5							
H20	320716	1	1	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	32.9	[illegible]
H21	320751	1	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	28.7	30.3	[illegible]
H22	[illegible]	[illegible]	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H24	[illegible]	1	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H26	[illegible]	[illegible]	[illegible]	[illegible]	416.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H27	[illegible]	2	[illegible]	3	430.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H28	[illegible]	1	[illegible]	5	468.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H29	[illegible]		2	3							
H30	[illegible]			6							
H31	[illegible]	1		5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H32	320650	1	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H33	320687	1	1	5							
H34	320699		1	5	468.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	36.5
H35	321593	[illegible]	[illegible]	2	434.0	[illegible]	[illegible]	[illegible]	[illegible]	27.4	[illegible]
H36	321036	1	2		489.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H37	321066	1	2		469.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H38	321026	1	2	3	433.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H39	321252	2	1	2							
H40	321027	1	2	4	481.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H41	321039	2	1	4	446.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H42	321018	1	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H43	320609		1	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H44	320606	1		3							

CASE	NUMBER	[illegible]	[illegible]	[illegible]	[illegible]MAX	ROBL	RBICON	RAPMID	[illegible]	[illegible]	[illegible]
H45	320634										
H46	32[illegible]39	1	[illegible]	3							
H47	32063[illegible]	[illegible]	1	4	451.0	449.0	82.0	[illegible]	[illegible]	[illegible]	[illegible]
H48	320621	2	1	3	398.0	393.0	69.0	[illegible]	[illegible]	[illegible]	[illegible]
H49	32[illegible]	2	2	3	455.0	449.0	72.0	[illegible]	[illegible]	[illegible]	[illegible]
H50	3205[illegible]	2	[illegible]	4	408.0	405.0	74[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H51	3[illegible]233	2	[illegible]	4	410.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H52	3[illegible]6[illegible]0	[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H5[illegible]	[illegible]66[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H5[illegible]	32[illegible]	[illegible]	[illegible]	1							
H56	3[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H5[illegible]	3[illegible]625	2	[illegible]	[illegible]							
H58	321723	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H59	321182	[illegible]									
H60	321186	2	[illegible]		400.0	398.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H61	321618	1	2	5	498.0	496.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H62	321188	[illegible]	1		439.0	436.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H63	32161[illegible]	2	2	5							
H64	32173[illegible]	1	[illegible]	4	4[illegible]5.0	18[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H65	22[illegible]91[illegible]	[illegible]	2		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H66	[illegible]	1	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H6[illegible]	22[illegible]3[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H68	2[illegible]8[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H69	22791[illegible]	[illegible]	[illegible]	[illegible]							
H70	227877	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H71	321056	[illegible]	[illegible]	4	4[illegible].0	47[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H72	227935	[illegible]	[illegible]		404.0	39[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H73	22793[illegible]	[illegible]	[illegible]		41[illegible].0	43[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H7[illegible]	[illegible]	[illegible]	[illegible]		[illegible].0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A 1 Continued

CASE	NUMBER	SEX	RACE	AGE	RMAX	ROBL	RBICON	RAPMID	RTRMID	RAPSUB	[illegible]
H76	318102	2	2								
H77	318125	2	2								
H78	318138	2	2		406.0	405.0	75.0	26.8	26.7	27.7	32.6
H79	318121	1	2		430.0	426.0	78.0	26.9	23.1	29.7	27.7
H80	318118	2	2		461.0	457.0	78.0	28.2	29.5	30.5	36.1
H81	318151	2	2		443.0	440.0	69.0	29.5	[illegible]	[illegible]	[illegible]
T1	3-87	1	1	3	486.0	484.0	91.0	[illegible]	[illegible]	[illegible]	[illegible]
T2	1-82	1	1	5	499.0	495.0	91.0	[illegible]	[illegible]	[illegible]	[illegible]
T3	1-83	2	1	7	459.0	453.0	78.0	[illegible]	[illegible]	[illegible]	[illegible]
T4	1-85	2	1	2	411.0	408.0	71.0	26.1	[illegible]	[illegible]	[illegible]
T5	5-87	2	1	5	433.0	431.0	77.0	32.0	[illegible]	[illegible]	[illegible]
T6	6-87	[illegible]	2	6	502.0	499.0	85.0	30.6	29.1	[illegible]	[illegible]
T7	2-83	[illegible]	1	5	465.0	462.0	81.0	35.2	29.4	[illegible]	33.3
T8	2-86	2	2	3	434.0	428.0	72.0	28.0	21.5	28.4	26.7
T9	13-88	1	1	3	486.0	481.0	92.0	33.7	28.1	31.2	35.8
T10	16-89	1	1	3	455.0	453.0	81.0	29.0	24.3	28.6	[illegible]
T11	1-88	2	1	7	412.0	410.0	70.0	25.3	22.9	[illegible]	[illegible]
T12	2-89	[illegible]	1	3	475.0	[illegible]	88.0	[illegible]	[illegible]	[illegible]	[illegible]
T13	17-88	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T14	3-88	[illegible]	2	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T15	6-89	2	2	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T16	1-88	[illegible]	2	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T17	18-88	[illegible]	2	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T18	19-88	[illegible]	1	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T19	6-88	[illegible]	1	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T20	9-89	[illegible]	[illegible]	4							
[illegible]	23-88	[illegible]	1	[illegible]							
[illegible]	5-90	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1. Continued

CASE	NUMBER	SEX	RACE	AGE	RMAX	ROBL	RAICON	RAPMID	[illegible]	[illegible]	[illegible]
T25	15-89	1	2	5	474.0	470.0	77.0	29.5	[illegible]	[illegible]	[illegible]
T26	18-90	1	2	2	482.0	476.0	85.0	34.4	28.1	[illegible]	[illegible]
T27	2-91	1	2	8	491.0	487.0	91.0	30.3	29.7	[illegible]	[illegible]
T28	3-90	1	1	4	446.0	440.0	90.0	31.7	28[illegible]	[illegible]	[illegible]
T29	20-90	1	1	2	437.0	435.0	79.0	[illegible]	[illegible]	[illegible]	[illegible]
T30	5-91	1	2	3	454.0	444.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T31	11-90	2	1	6	451.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T32	17-90	2	2	3	447.0	443.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T33	14-90	1	1	3	496.0	491.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T34	8-91	1	2	7	503.0	498.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T35	[illegible]-92	1	2	5	523.0	520.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T36	2-9[illegible]	[illegible]	[illegible]	6	421.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T37	1[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T38	15-[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T39	4-92	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T40	6-92	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T41	8-92	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T42	17-91	[illegible]	[illegible]	[illegible]							
T43	20-93	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T44	9-93	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 [illegible]

CASE	RR1	RR2	RR3	RPROX	RBDIS	RRPROX	RTORS	LMAX	[illegible]	PICON	LAPMID
M1	-0.7	-7.7	0.8	3.0	15.4	18.0	2.6	483.0	[illegible]	81.0	31.6
M3								412.0	[illegible]	[illegible]	[illegible]
M11	-1.9	-6.1	-0.9	3.0	15.0	18.7	3.7	[illegible]	[illegible]	[illegible]	[illegible]
M12	-1.8	-8.2	-1.9	4.8	12.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M13	0.7	-3.6	1.1	4.1	20.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M14	[illegible]	-10.5	-5.2	2.8	14.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M15	1.1	0.1	[illegible]	3.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M16	-0.8	[illegible]	3.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M17	0.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M18	-0.8	[illegible]	-4.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M19	0.0	[illegible]	2.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M20	[illegible]	-11.7	-1.8	-0.2	11.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M21	[illegible]	[illegible]	-3.1	2.0	10.9	[illegible]	[illegible]				
M22	[illegible]	[illegible]	[illegible]	3.3	26.6	[illegible]	[illegible]				
M23	[illegible]	[illegible]	-0.1	4.2	21.3	[illegible]	[illegible]				
M24	[illegible]	[illegible]	[illegible]	4.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
M30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M34								[illegible]	[illegible]	[illegible]	[illegible]
M36	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M237								[illegible]	[illegible]	[illegible]	[illegible]
M238								[illegible]	[illegible]		[illegible]
M37	1.6	-2.5	0.0	4.6	18.4	[illegible]	7.2	[illegible]	[illegible]	42.0	[illegible]
M38	5.0	-2.1	1.4	7.0	15.5	[illegible]	3.5	[illegible]	[illegible]	[illegible]	[illegible]
M39	4.5	0.9	4.3	5.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M40	[illegible]	[illegible]	5.2	4.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A 1 Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	REPROX	RTORS	IMAX	[illegible]	[illegible]	[illegible]
M41	4.4	0.7	2.9	7.0	15.8	24.6	8.8	468.0	[illegible]	[illegible]	[illegible]
M42	0.4	-1.4	7.0	8.4	21.3	34.4	13.1	490.0	488.0	[illegible]	[illegible]
M43	-4.7	-5.5	8.5	1.4	19.2	21.8	2.6	503.0	499.0	[illegible]	[illegible]
M44	-2.8	-9.1	0.5	6.2	18.5	25.3	6.8	442.0	440.0	[illegible]	[illegible]
M45	-8.8	3.9	3.9	4.4	18.9	19.5	0.6	489.0	483.0	[illegible]	[illegible]
M46	-0.2	-9.4	1.2	5.9	22.1	36.8	14.7	490.0	485.0	[illegible]	[illegible]
M47	-0.8	-8.4	0.2	4.2	21.9	26.6	4.7	495.0	491.0	[illegible]	[illegible]
M48	-4.2	-8.2	2.9	7.9	17.8	19.1	1.3	455.0	461.0	[illegible]	[illegible]
M49	4.7	-1.4	5.6	8.1	15.7	20.0	4.3	[illegible]	[illegible]	[illegible]	[illegible]
M50	4.2	-0.8	5.1	9.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M51	-1.7	-8.6	[illegible]	4.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M52	-0.8	-5.7	[illegible]	5.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M53	3.4	-7.8	-4.8	[illegible]	6.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M54	-0.6	6.0	-3.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M55	0.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	512.0	[illegible]	[illegible]	[illegible]
M56	0	6.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	468.0	[illegible]	[illegible]	[illegible]
M57	1.6	3.8	5.6	[illegible]	[illegible]	[illegible]	0.3	487.0	483.0	[illegible]	[illegible]
M58	-3.9	-7.4	-0.5	[illegible]	[illegible]	[illegible]	2.6	472.0	[illegible]	[illegible]	7.9
M59	1.6	-4.3	6.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.0
M60	[illegible]	-12.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M61	6.5	-0.9	0.1	[illegible]	[illegible]	[illegible]	-1.0	[illegible]	[illegible]	[illegible]	[illegible]
M62	6.1	3.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M63	-0.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M64	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M65	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M66	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	418.0	415.0	[illegible]	[illegible]
M69	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	408.0	406.0	[illegible]	[illegible]
M70	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.7	404.0	400.0	68.0	[illegible]

Table A.1 Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	[illegible]	LBICON	LAPMID
M71	2.0	1.6	8.1	6.8	17.7	19.2	1.5	443.0	[illegible]	24.0	26.0
M72	2.2	-3.9	2.2	5.9	16.2	21.9	5.7	465.0	[illegible]	[illegible]	[illegible]
M73	-0.3	-4.0	5.6	5.4	19.9	18.0	-1.9	469.0	[illegible]	[illegible]	[illegible]
M74	0.4	-4.5	2.2	4.9	18.2	25.4	7.2	429.0	[illegible]	[illegible]	[illegible]
M75	3.8	1.9	4.1	[illegible]	[illegible]	33.1	13.7	[illegible]	[illegible]	[illegible]	[illegible]
M76	2.9	-2.3	3.1	1.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M77	[illegible]	-9.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M78	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M79	1.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M80	0.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M81	3.0	-6.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M82	0.0	-3.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M83	[illegible]	-2.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M84	-1.0	-7.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M85	-0.5	-0.8	[illegible]	5.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M86	[illegible]	[illegible]	[illegible]	5.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M87	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M88	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M93	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M94	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M95	-1.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M98	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	LOBL	[illegible]	[illegible]
M101	1.4	-5.3	-2.2	6.2	10.4	15.2	4.8	457.0	457.0	[illegible]	[illegible]
M102	-0.7	-3.0	4.0	4.9	26.0	28.5	2.5	476.0	473.0	86.0	[illegible]
M103	-6.6	-9.5	0.2	3.0	14.5	18.3	3.8	458.0	456.0	86.0	[illegible]
M104	1.0	-6.6	0.9	7.8	19.4	27.2	7.8	507.0	504.0	86.0	[illegible]
M105	1.1	-1.9	6.3	7.3	14.6	19.5	4.9	468.0	464.0	85.0	[illegible]
M106	2.8	0.8	10.5	6.0	25.6	26.8	1.2	518.0	514.0	89.0	25.9
M107	4.3	-10.1	3.5	4.3	13.9	13.6	-0.3	542.0	532.0	82.0	34.2
M108	3.6	0.1	5.5	6.6	18.5	25.5	7.0	453.0	448.0	88.0	27.6
M109	0.5	-5.1	3.3	4.9	15.4	19.5	4.1	470.0	466.0	86.0	[illegible]
M110	0.9	-9.2	-3.1	1.7	16.7	18.3	1.6	433.0	432.0	[illegible]	[illegible]
M111	-3.6	-10.1	0.7	4.5	16.7	20.1	3.4	504.0	501.0	[illegible]	[illegible]
M112	5.5	-0.5	4.1	8.1	8.6	13.5	4.9	441.0	439.0	[illegible]	[illegible]
M113	1.3	-1.1	6.0	6.7	21.0	20.4	-0.6	474.0	471.0	[illegible]	[illegible]
M114	4.6	-1.0	7.2	8.4	21.6	24.9	3.3	537.0	533.0	93.0	[illegible]
M115	6.1	1.6	8.7	9.2	36.0	47.7	11.7	506.0	505.0	90.0	29.0
M116	2.4	-0.6	5.5	9.0	27.1	31.6	4.5	486.0	474.0	86.0	29.2
M117	1.2	-5.8	3.7	3.1	16.0	19.0	3.0	462.0	459.0	79.0	27.0
M118	3.6	1.1	4.1	4.5	14.4	17.3	2.9	409.0	408.0	80.0	[illegible]
M119	-4.9	-16.7	-5.0	2.7	8.9	10.3	1.4	468.0	466.0	[illegible]	[illegible]
M120	-2.4	-8.6	3.3	6.2	25.9	30.2	1.3	[illegible]	[illegible]	[illegible]	[illegible]
M121	4.2	-3.6	4.1	10.7	21.3	26.6	5.3	[illegible]	[illegible]	[illegible]	[illegible]
M122	0.1	-8.2	-0.2	4.5	11.3	12.1	0.8	[illegible]	[illegible]	[illegible]	[illegible]
M123	2.4	-3.4	2.9	7.1	19.2	24.2	5.0	[illegible]	[illegible]	[illegible]	[illegible]
M124	-1.5	7.8	0.3	6.5	13.6	19.6	6.0	[illegible]	[illegible]	[illegible]	[illegible]
M125	-2.7	-5.2	-0.2	3.3	21.8	23.5	1.7	437.0	[illegible]	[illegible]	[illegible]
M126	-0.4	-7.2	1.0	7.3	24.4	29.9	5.5	454.0	[illegible]	[illegible]	[illegible]
M127	3.3	-0.7	6.5	4.9	13.9	17.5	3.6	429.0	[illegible]	[illegible]	[illegible]
M128	-4.2	-9.5	-2.1	6.0	17.8	20.6	2.8	419.0	417.0	73	[illegible]
M129	1.0	1.0	1.2	6.8	18.0	21.8	3.8	430.0	424.0	76.0	[illegible]
M130	4.1	0.2	4.3	5.8	14.9	20.9	6.0	418.0	415.0	67.0	[illegible]

Table A.1 Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	LOML	LBICON	LAPMID
M131	-6.7	-9.5	-1.6	-1.4	3.2	3.1	-0.1	440.0	437.0	79.0	28.3
M132	1.2	-4.7	2.0	4.0	15.4	18.7	3.3	394.0	390.0	72.0	25.9
M133	0.7	-4.2	-0.6	7.6	11.5	12.9	1.4	431.0	429.0	75.0	24.6
M134	0.6	-4.1	2.7	7.8	14.7	17.2	2.5	454.0	449.0	75.0	27.7
M135	-2.3	-7.0	3.3	6.2	12.4	12.4	0.0	482.0	480.0	73.0	25.5
M136	-2.3	-4.4	2.1	6.0	12.7	12.5	-0.2	443.0	438.0	76.0	26.1
M137	1.5	-3.4	6.5	4.6	19.1	23.6	4.5	431.0	430.0	75.0	24.5
M138	-1.9	-7.9	2.0	-0.3	7.9	7.9	0.0	474.0	470.0	80.0	25.1
M139	4.6	-0.6	9.5	3.1	24.3	31.8	7.5	474.0	469.0	74.0	28.3
M140	3.2	0.1	6.7	4.6	22.2	34.4	12.2	451.0	440.0	71.0	23.6
M141	1.4	-5.6	-0.7	3.6	15.7	20.0	4.3	446.0	444.0	69.0	23.4
M142	-2.3	-5.8	0.7	5.8	19.9	22.1	2.2	452.0	444.0	74.0	26.0
M143	3.4	-5.8	11.7	2.7	23.9	27.5	3.6	482.0	477.0	76.0	29.8
M144	1.7	-5.8	2.9	6.2	19.1	20.5	1.4	425.0	420.0	72.0	24.9
M145	0.7	-2.2	3.8	2.9	26.2	30.0	3.8	430.0	419.0	73.0	26.7
M146	2.4	1.8	2.9	4.3	20.5	23.7	3.2	437.0	428.0	72.0	24.8
M147	3.8	2.7	7.0	6.0	21.1	25.2	4.1	451.0	445.0	75.0	26.9
M148	-1.2	-7.1	0.7	5.2	20.6	20.8	0.2	438.0	437.0	71.0	24.0
M149	4.3	2.5	10.4	5.8	23.9	27.5	3.6	468.0	461.0	76.0	26.8
M150	5.4	3.1	9.0	5.5	14.2	20.2	6.0	430.0	425.0	74.0	24.9
M151	2.1	-4.9	-3.4	7.1	9.5	14.2	4.7	428.0	427.0	81.0	31.0
M152	4.1	-0.5	1.8	6.4	20.8	22.6	1.8	434.0			26.7
M153	1.6	-4.4	1.0	6.1	17.1	21.3	4.2	432.0	427.0	78.0	27.4
M154	0.1	-7.4	-1.8	4.9	14.0	17.6	3.6	457.0	454.0	78.0	29.8
M155	-0.8	-6.4	-1.9	8.2	23.8	28.9	5.1	439.0	434.0	74.0	23.8
M156	6.4	4.2	9.7	10.4	18.0	23.6	5.6	446.0	444.0	78.0	24.2
M157	-0.2	-5.8	-2.2	5.3	9.3	13.7	4.4	454.0	448.0	75.0	25.3
M158	1.5	-8.4	-1.7	3.2	10.0	10.6	0.6	478.0	472.0	81.0	[illegible]
M159	2.0	-7.4	-1.7	4.9	9.2	8.4	-0.8	419.0	416.0	[illegible]	[illegible]
M160	-0.9	-4.6	3.8	[illegible]	[illegible]	19.5	[illegible]	[illegible]	478.0	[illegible]	[illegible]

Table A.1 Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	[illegible]	[illegible]	[illegible]
M161	2.6	-3.5	3.8	7.9	21.4	28.0	6.6	456.[illegible]	[illegible]	[illegible]	[illegible]
M162	-0.2	-10.3	-0.8	8.2	10.4	12.9	2.5	487.[illegible]	[illegible]	[illegible]	[illegible]
M163	0.0	5.0	7.7	6.5	19.7	22.1	2.4	459.[illegible]	[illegible]	[illegible]	[illegible]
M164	1.4	-3.9	-6.1	5.8	19.8	26.2	6.4	446.[illegible]	[illegible]	[illegible]	[illegible]
M165	-2.3	-3.7	-2.1	3.0	14.2	20.9	6.7	438.0	435.0	71.[illegible]	[illegible]
M166	3.1	-0.2	4.2	4.1	18.4	24.2	5.8	466.0	463.0	76.[illegible]	[illegible]
M167	1.7	0.6	7.2	5.2	22.8	27.3	4.5	462.0	456.0	[illegible]	[illegible]
M168	-0.9	-4.8	5.1	5.1	16.8	16.6	-0.2	475.0	470.[illegible]	[illegible]	[illegible]
M169	0.9	-5.4	[illegible]	[illegible]	22.4	26.6	4.2	[illegible]	[illegible]	[illegible]	[illegible]
M170	3.0	0.9	6.2	[illegible]	19.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M171	-2.9	-9.9	3.6	6.1	18.9	17.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M172	-5.2	[illegible]	[illegible]	[illegible]	15.9	[illegible]	2.3	[illegible]	[illegible]	[illegible]	[illegible]
M173	-6.7	-18.0	[illegible]	[illegible]	[illegible]	0.0	0.0	44[illegible]	[illegible]	[illegible]	[illegible]
M174	-1.8	[illegible]	[illegible]	1.6	18.6	[illegible]	4.0	461.[illegible]	[illegible]	[illegible]	[illegible]
M175	0.9	[illegible]	-4.1	[illegible]	[illegible]	[illegible]	-0.1	41[illegible]	[illegible]	[illegible]	[illegible]
M176	-0.7	[illegible]	[illegible]	[illegible]	13.[illegible]	[illegible]	2.9	[illegible]	[illegible]	[illegible]	[illegible]
M177	-2.5	[illegible]	7.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M178	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M179	[illegible]	[illegible]	0.0	2.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M180	-6.0	-10.5	0.4	2.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	41.0	[illegible]
M181	[illegible]	-5.2	2.1	1.7	17.5	[illegible]	[illegible]	[illegible]	[illegible]	86.0	30[illegible]
M182	-0.1	-5.4	1.1	4.9	13.1	[illegible]	[illegible]	[illegible]	[illegible]	84.0	[illegible]
M183	-0.6	[illegible]	-1.1	3.2	16.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M184	3.1	[illegible]	11.4	6.5	17.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M185	4.1	-4.4	0.5	7.3	16.5	[illegible]	6.6	471.0	[illegible]	[illegible]	[illegible]
M186	4.2	-2.9	5.1	6.9	6.5	8.0	1.5	481.0	478.[illegible]	[illegible]	[illegible]
M187	3.0	0.3	5.1	6.9	27.9	[illegible]	5.0	501.0	496.0	[illegible]	[illegible]
M188	-2.1	5.5	4.2	5.3	20.7	25.1	4.4	479.0	477.0	80.[illegible]	[illegible]
M189	-2.2	-2.2	6.2	0.0	[illegible]	15.1	2.8	386.0	382.0	65.0	[illegible]
M190	4.4	0.3	8.2	6.2	24.0	30.8	6.8	483.0	482.0	79.0	[illegible]

Table A.1. Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	LOBL	LBICON	LAPMID
M191	0.0	-4.2	0.2	3.6	15.0	17.7	2.7	396.0	394.0	73.0	24.5
M192	0.6	-2.3	2.6	3.6	17.2	16.3	-0.9	432.0	429.0	[illegible]	[illegible]
M193	4.6	-0.5	7.6	7.8	26.1	36.4	10.3	446.0	438.0	[illegible]	[illegible]
M194	0.3	-4.8	0.3	4.1	14.0	16.1	2.1	453.0	[illegible]	[illegible]	[illegible]
M195	1.1	-1.0	4.7	2.2	15.2	13.1	-2.1	438.0	[illegible]	[illegible]	[illegible]
M196	0.2	-5.7	-2.8	2.8	13.6	17.8	4.2	[illegible]	[illegible]	[illegible]	[illegible]
M197	-3.8	-10.2	-2.9	1.2	19.9	20.6	0.7	[illegible]	[illegible]	[illegible]	[illegible]
M198	-2.8	-5.3	1.2	4.3	8.8	6.7	-2.1	[illegible]	[illegible]	[illegible]	[illegible]
M199	-2.9	-7.9	-1.8	2.5	12.4	19.7	7.3	[illegible]	[illegible]	[illegible]	[illegible]
M200	[illegible]	0.6	6.4	6.5	14.3	14.5	0.2	[illegible]	[illegible]	[illegible]	[illegible]
M201	-1.4	-4.9	0.6	4.2	12.9	16.1	3.2	[illegible]	[illegible]	[illegible]	[illegible]
M202	2.3	-2.5	4.5	8.1	20.7	21.7	1.0	[illegible]	[illegible]	[illegible]	[illegible]
M203	-0.7	[illegible]	5.3	4.4	23.9	25.7	1.8	[illegible]	[illegible]	[illegible]	[illegible]
M204	0.3	-3.8	0.7	6.6	10.1	12.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M205	[illegible]	-10.1	1.4	0.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M206	[illegible]	-7.1	0.2	5.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M207	-4.9	-10.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M208	-0.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M209	3.1	-4.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M210	1.9	-2.8	2.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M211	-0.2	-3.0	2.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M212	0.5	-7.5	-2.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M213	-0.3	-8.4	-2.4	2.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M214	2.1	-3.2	4.2	7.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M215	-3.2	-7.3	2.4	3.1	13.1	[illegible]	[illegible]	[illegible]	454.0	[illegible]	[illegible]
M216	-0.2	-3.6	2.5	4.6	8.5	[illegible]	[illegible]	[illegible]	445.0	[illegible]	[illegible]
M217	-0.6	[illegible]	-5.0	5.1	16.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M218	-0.2	-2.2	6.0	4.2	25.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M219	[illegible]	-2.7	2.7	5.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M220	1.4	[illegible]	-0.5	6.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1: Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	LOBL	LBICON	LAPMID
M221	-0.9	-6.5	-1.5	6.6	22.9	25.1	2.2	410.0	407.0	73.0	24.1
M222	-0.9	-4.5	0.5	2.7	17.8	23.9	6.1	423.0	419.0	75.0	24.6
M223	0.3	-8.2	-5.8	3.5	5.3	5.5	0.2	387.0	386.0	70.0	23.5
M224	-1.4	-5.5	0.1	7.5	14.3	18.6	4.3	457.0	454.0	81.0	27.8
M225	0.2	-4.0	3.9	6.7	20.3	27.0	6.7	483.0	480.0	86.0	30.1
M226	1.1	-7.4	0.1	4.5	9.3	10.5	1.2	444.0	436.0	72.0	27.4
M227	4.1	[illegible]	7.1	5.6	22.0	24.5	2.5	473.0	471.0	85.0	30.2
M228	[illegible]	[illegible]	-0.9	2.7	13.2	15.4	2.2	451.0	447.0	71.0	27.0
[illegible]	[illegible]	[illegible]	-2.9	4.3	12.1	19.0	6.9	443.0	439.0	74.0	27.5
[illegible]	[illegible]	[illegible]	3.2	3.3	18.3	26.7	6.4	486.0	485.0	80.0	29.0
[illegible]	[illegible]	[illegible]	4.3	4.8	17.1	[illegible]	6.4	447.0	443.0	75.0	28.0
[illegible]	[illegible]	[illegible]	[illegible]	5.5	19.3	[illegible]	1.8	451.0	446.0	80.0	26.2
[illegible]	[illegible]	[illegible]	1.6	[illegible]	13.8	17.6	3.8	425.0	421.0	73.0	25.2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.2	15.4	1.2	484.0	479.0	83.0	28.6
[illegible]35	0.1	[illegible]	5.4	[illegible]	16.6	23.3	6.7	516.0	514.0	84.0	30.0
[illegible]236	5.8	6.2	[illegible]	8.4	29.1	31.5	2.4	476.0	473.0	84.0	27.4
[illegible]41	[illegible]	-8.8	[illegible]	5.4	9.6	13.0	3.4	453.0	453.0	87.0	29.9
[illegible]	[illegible]	-2.7	-0.6	7.3	13.7	18.2	4.9	429.0	429.0	81.0	26.1
[illegible]	0.1	-6.0	5.9	6.9	21.8	24.5	2.7				
[illegible]	-3.8	-8.6	3.1	3.0	18.3	20.9	2.8	448.0	441.0	75.0	25.1
[illegible]	-1.7	-7.8	0.6	1.4	19.9	[illegible]	8.6	436.0	436.0	77.0	29.1
[illegible]	-4.6	[illegible]	0.2	4.2	14.5	27.3	2.8	449.0	448.0	88.0	31.0
[illegible]	[illegible]	[illegible]	[illegible]	3.9	[illegible]	32.4	11.2	503.0	500.0	85.0	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	33.9	5.6	474.0	473.0	87.0	29.1
[illegible]	[illegible]	[illegible]	[illegible]	1.7	[illegible]	26.1	4.0	471.0	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	2.1	6.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1: Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	LOBL	LBICON	LAPMID
H15	3.4	-7.4	-1.0	5.5	11.0	14.7	3.7	453.0	452.0	87.0	27.5
H16								437.0	435.0	80.0	[illegible]
H17								448.0	442.0	78.0	[illegible]
H18								[illegible]	[illegible]	[illegible]	[illegible]
H19								[illegible]	[illegible]	[illegible]	[illegible]
H20	0.3	-7.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
H21	2.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	383.[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.2	416.0	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.1	433.0	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.6	472.[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
H33								[illegible]	[illegible]	[illegible]	[illegible]
H34	1.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
H35	2.8	[illegible]	[illegible]	6.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H36	2.5	-7.3	-1.1	8.0	7.7	[illegible]	1.0	481.[illegible]	[illegible]	[illegible]	[illegible]
H37	3.9	6.2	1.3	7.7	17.4	20.9	3.5	468.[illegible]	[illegible]	[illegible]	[illegible]
H38	-1.0	-3.9	3.0	6.9	16.4	24.2	7.8	435.[illegible]	[illegible]	[illegible]	[illegible]
H39								398[illegible]	[illegible]	[illegible]	[illegible]
H40	1.9	-4.8	4.6	6.4	14.5	16.0	1.5				
H41	-2.4	-13.1	-6.0	1.2	19.0	[illegible]	[illegible]				
H42	1.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
H43	-0.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H44								[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	RR1	RR2	RR3	RPROX	RHDIS	RBPROX	RTORS	LMAX	LOBL	LBI[illegible]	[illegible]
H45								424.0	416.0	75.0	[illegible]
H46								437.0	434.0	76.0	[illegible]
H47	-5.4	-6.4	3.8	4.3	16.3	26.4	10.1	448.0	447.0	70.0	27.[illegible]
H48	1.7	-1.9	1.1	4.6	11.0	14.6	3.6	397.0	391.0	70.0	24.5
H49	1.8	-2.8	2.6	7.3	16.9	20.7	3.8				
H50	-2.3	-6.6	0.3	1.9	16.1	32.1	16.0				
H51	-2.3	-6.8	-1.9	5.0	13.8	24.3	10.5	411.0	409.0	70.0	24.9
H52	-0.6	-6.9	-1.9	4.8	8.5	12.3	3.8	409.0	405.0	72.0	[illegible]
H53	-1.7	-9.9	1.1	7.4	21.3	26.2	4.9	470.0	466.0	76.[illegible]	[illegible]
H54								498.0	493.[illegible]	[illegible]	[illegible]
H56	-1.6	-9.2	0.2	7.7	14.7	18.0	3.3	463.0	463.[illegible]	[illegible]	[illegible]
H57								373.0	369.[illegible]	[illegible]	[illegible]
H58	1.5	-1.6	11.3	6.9	19.4	25.3	5.9	431.0	431.[illegible]	[illegible]	[illegible]
H59								452.0	449.0	[illegible]	[illegible]
H60	3.4	-2.2	0.0	8.5	13.3	18.9	5.6	403.0	399.0	[illegible]	23.[illegible]
H61	-9.8	-16.6	-2.7	-0.4	11.0	12.1	1.1				
H62	-0.6	-8.7	-3.0	6.2	12.5	15.7	3.2	442.0	440.0	74.0	26.1
H63								437.0	431.0	71.0	27.6
H64	6.9	2.1	11.0	6.7	27.1	3[illegible].0	4.9	487.0	483.0	90.0	25.5
H65	-1.6	-6.8	3.0	5.7	14.1	17.7	3.6	430.0	427.0	72.0	25.[illegible]
H66	1.0	-4.1	2.8	6.2	14.[illegible]	19.4	[illegible]	441.[illegible]	44[illegible]	[illegible]	[illegible]
H67	-2.3	-10.3	-2.2	3.6	11.3	1[illegible].1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H68	-7.3	-13.4	-2.0	1.0	14.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H69								[illegible]	[illegible]	[illegible]	[illegible]
H70	3.2	3.6	-1.9	3.4	[illegible]	5.[illegible]	0.[illegible]				
H71	2.1	-3.6	4.4	6.6	19.1	[illegible].6	3.[illegible]				
H72	-3.4	-7.8	-1.2	1.0	14.5	22.4	7.9	405.0	406.[illegible]	[illegible]	[illegible]
H73	-2.4	-7.9	-0.7	6.8	19.2	26.4	7.2	436.0	432.0	[illegible]	[illegible]
H74	0.7	-4.8	[illegible].7	6.2	13.[illegible]	12.8	-0.7	448.0	443.0	[illegible]	[illegible]
H75	-1.7	-3.5	[illegible]2	1.2	15.1	21.5	6.4	393.0	390.0	[illegible]	23.[illegible]

Table A.1: Continued

CASE	RR1	RR2	RR3	RPROX	RMDIS	RBPROX	RTORS	LMAX	LOBL	LBICON	LAPMID
H76								415.0	409.0	77.0	26.3
H77								417.0	414.0	75.0	28.1
H78	3.8	-2.3	2.6	6.1	12.2	15.2	3.0	407.0	405.0	75.0	[illegible]
H79	5.0	0.2	4.7	7.4	17.5	23.2	5.7	427.0	424.0	[illegible]	[illegible]
H80	-2.6	-7.8	-1.1	4.6	16.5	22.3	5.8	[illegible]	[illegible]	[illegible]	[illegible]
H81	-5.7	-12.5	-1.7	3.3	16.1	24.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T1	1.0	-6.0	1.7	5.5	14.6	17.3	2.7	[illegible]	[illegible]	[illegible]	[illegible]
T2	3.4	-1.8	5.9	6.4	16.3	21.3	5.0	[illegible]	[illegible]	[illegible]	[illegible]
T3	2.4	-4.6	-1.7	8.2	10.1	12.9	2.8	[illegible]	[illegible]	[illegible]	[illegible]
T4	-3.5	-11.1	-6.3	2.5	11.8	17.2	5.4	413.0	[illegible]	[illegible]	[illegible]
T5	-2.9	[illegible]	-3.1	1.5	7.6	10.7	3.1	429.0	[illegible]	[illegible]	[illegible]
T6	5.0	1.5	7.1	8.3	15.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T7	-5.8	-13.0	-3.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T8	-0.3	[illegible]	[illegible]	[illegible]	19.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T9	[illegible]	[illegible]	[illegible]	2.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T14	3.5	[illegible]	3.1	[illegible]	[illegible]	[illegible]	1.0	[illegible]	[illegible]	[illegible]	[illegible]
T15	4.7	-0.7	-3.9	[illegible]	[illegible]	[illegible]	[illegible]	408.0	[illegible]	[illegible]	[illegible]
T16	-2.6	-12.0	-0.9	[illegible]	[illegible]	[illegible]	5.9	474.0	[illegible]	[illegible]	[illegible]
T17	3.9	3.7	10.6	8.7	24.4	24.6	0.2	469.0	[illegible]	[illegible]	[illegible]
T18	-0.7	-10.5	-2.8	2.2	13.4	15.3	1.9	462.0	[illegible]	[illegible]	[illegible]
T19	-1.6	-7.6	-2.1	3.9	26.8	27.4	0.6	434.0	[illegible]	[illegible]	[illegible]
T20								474.0	[illegible]	[illegible]	[illegible]
T21								[illegible]	[illegible]	[illegible]	[illegible]
T22	[illegible]	[illegible]	[illegible]	6.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T23	[illegible]	1.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A 1. Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	LOBL	[illegible]	[illegible]
T25	2.8	-2.3	7.1	2.2	17.6	22.6	5.0	479.0	475.0	[illegible]	[illegible]
T26	-0.7	-3.2	5.5	5.9	23.0	23.8	0.8	484.0	479.0	[illegible]	[illegible]
T27	4.6	-1.3	8.0	10.0	20.8	25.8	5.0	489.0	484.0	[illegible]	[illegible]
T28	-2.7	-4.9	5.0	6.5	13.4	13.4	0.0	448.0	443.0	87.0	[illegible]
T29	-2.9	-7.6	1.0	2.4	15.4	24.2	[illegible]	440.0	438.0	78.0	[illegible]
T30	-1.3	-7.1	2.6	3.9	16.0	17.8	1.8	448.0	445.0	79.0	[illegible]
T31	1.3	-7.8	-2.8	4.6	9.6	13.3	3.7	444.0	439.0	76.0	[illegible]
T32	-4.7	-7.9	0.2	2.7	13.9	12.7	-1.1	450.0	444.0	74.0	[illegible]
T33	-5.6	-11.7	0.1	0.4	8.5	8.7	0.2	500.0	495.0	80.0	[illegible]
T34	1.6	-5.4	5.0	4.4	20.8	21.1	0.3	499.5	494.[illegible]	[illegible]	[illegible]
T35	1.0	-2.5	6.9	4.9	16.2	18.6	2.4	526.[illegible]	[illegible]	[illegible]	[illegible]
T36	-6.0	-10.3	-1.2	-0.4	13.8	13.8	0.[illegible]	419.[illegible]	[illegible]	[illegible]	[illegible]
T37	-1.3	-3.5	3.1	5.4	15.0	17.0	[illegible].0	505.0	50[illegible]	[illegible]	[illegible]
T38	2.2	-3.6	1.9	6.4	15.2	14.7	-0.5	527.0	526[illegible]	[illegible]	[illegible]
T39	3.0	-0.5	3.0	6.9	9.6	11.8	2.2	471.0	467[illegible]	[illegible]	[illegible]
T40	1.1	-5.0	0.7	4.7	20.2	23.3	3.1	417.0	413.0	[illegible]	26
T41	2.9	-3.3	0.2	4.9	14.5	16.3	1.9	414.0	411.[illegible]	69.0	26.1
T42								446.0	111.0	82.0	30.[illegible]
T43	1.3	-5.8	-3.9	3.7	11.0	13.3	2.5	385.0	38[illegible].0	68.0	26.1
T44	1.6	-3.2	2.2	7.0	16.3	16.5	2.2				
T45	1.5	-3.3	-0.1	4.9	13.5	14.0	0.[illegible]				
T46											
T47								[illegible]	[illegible]	[illegible]	[illegible]
T48	[illegible]	0.3	4.3	[illegible]	[illegible]	14.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T49	[illegible].1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CASE	LTRMID	LAPSUR	LTR[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	LTR[illegible]
M1	24.3	27.8	[illegible]	[illegible]	-6.8	[illegible]	[illegible]	17.9	[illegible]	[illegible]
M3	21.0	27.1	25.1	-0.9	-5.5	[illegible]	3.9	19.2	[illegible]	[illegible]
M11	22.5	28.8	28.5	1.1	-3.6	-0.4	3.7	19.8	25.[illegible]	5.6
M12	27.0	30.6	32.1	-1.1	-8.7	-3.0	0.0	12.6	14.[illegible]	1.8
M13	18.9	27.1	28.0	0.8	-3.1	0.7	3.8	20.8	21.0	0.2
M14	33.9	38.6	38.3	-1.2	[illegible]	-5.9	3.0	14.9	18.9	[illegible]
M15	22.7	28.0	29.3	-0.8	-1.4	2.6	2.0	22.2	[illegible]	[illegible]
M16	27.4	30.1	34.[illegible]	1.5	-2.1	3.1	4.0	13.9	[illegible]	[illegible]
M17	25.5	28.6	27.9	0.8	-3.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M18	20.0	29.5	26.9	1.[illegible]	-4.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M19	28.8	29.2	33.[illegible]	[illegible]	-3.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M20	27.0	29.2	31.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M21										
M22										
M23										
M24	24.6	26.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M25	25.[illegible]	36.1	29.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M26										
M28	23.1	27.5	26.7	-[illegible]	-[illegible]	-[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M29										
M30	28.7	27.5	30.5	2.9	0.[illegible]	[illegible]	[illegible]	[illegible]	23.4	[illegible]
M31	27.6	33.7	33.5	-1.2	-4.[illegible]	[illegible]	[illegible]	15.8	19.8	[illegible]
M34	24.9	27.9	31.1	2.0	-5.[illegible]	0.[illegible]	5.1	18.4	22.1	[illegible]
M36	28.0	32.2	31.9	1.2	-1.[illegible]	4.2	3.[illegible]	15.8	16.4	[illegible]
M237	27.5	28.3	30.4	-1.9	-8.[illegible]	2.8	5.3	13.1	20.7	[illegible]
M238	26.9	28.1	30.2	-0.1	-3.7	5.2	4.6	15.1	[illegible]	[illegible]
M37	28.0	29.6	28.9	[illegible]	-1.8	2.6	5.7	19.1	24.[illegible]	[illegible]
M38	28.3	28.3	33.3	1.2	-5.6	2.2	5.2	13.2	16.[illegible]	[illegible]
M39	24.5	32.0	24.4	5.2	1.[illegible]	3.3	5.8	25.1	34.5	[illegible]
M40	25.1	28.9	28.9	3.[illegible]	-[illegible]	3.9	3.8	24.5	26.5	[illegible]

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	LBDI	[illegible]	[illegible]
M41	29.9	33.7	36.3	5.5	-0.9	2.3	5.4	[illegible]	[illegible]	[illegible]
M42	30.2	30.1	[illegible]	2.9	0.2	6.4	5.1	[illegible]	[illegible]	[illegible]
M43	27.5	30.2	31.5	-3.4	[illegible]	5.0	[illegible]	[illegible]	[illegible]	[illegible]
M44	27.0	29.2	31.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M45	26.7	35.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M46	30.6	32.2	35.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M47	30.2	34.9	36.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M48	28.5	30.6	31.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M49	30.5	32.1	36.4	-1.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M50	27.1	31.2	[illegible]	4.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M51	28.5	[illegible]	[illegible]	-4.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M52	[illegible]	[illegible]	[illegible]	1.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M53	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M55	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	16.6	[illegible]	[illegible]
M56	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.9	9.8	[illegible]	[illegible]
M5[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9.9	19.5	26.3	[illegible]
M58	[illegible]	[illegible]	[illegible]	[illegible]	-1.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M59	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M60	[illegible]	[illegible]	[illegible]	[illegible]	-11.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M61	[illegible]	[illegible]	[illegible]	3.2	0.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M62	[illegible]	[illegible]	[illegible]	[illegible]	1.9	7.5	8.3	[illegible]	[illegible]	[illegible]
M63	[illegible]	[illegible]	[illegible]	1.0	-5.2	2.5	3.5	[illegible]	[illegible]	[illegible]
M64	[illegible]	33.2	[illegible]	0.2	[illegible]	2.9	6.2	[illegible]	[illegible]	[illegible]
M65	22.0	[illegible]	[illegible]	-1.0	-5.7	-0.4	4.3	13.2	[illegible]	[illegible]
M66	27.8	31.9	30.4	3.6	0.0	6.9	6.0	21.6	[illegible]	[illegible]
M67	24.4	[illegible]	29.2	-1.9	-7.6	-1.0	5.5	14.2	[illegible]	[illegible]
M68	21.1	27.5	27.4	-0.9	-5.4	-0.3	5.6	[illegible]	[illegible]	[illegible]
M69	19.1	24.1	26.5	1.4	3.2	7.2	3.3	19.4	[illegible]	[illegible]
M70	23.4	25.5	28.1	-0.9	-4.6	0.1	5.3	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	LMDIS	LBPROX	LTORS
M71	23.8	27.4	29.1	3.8	2.2	7.8	5.9	17.3	17.4	0.1
M72	23.6	32.4	31.3	3.2	-4.9	0.5	5.1	17.4	21.1	3.7
M73	25.0	32.1	28.9	-0.8	-5.0	1.9	4.4	17.2	16.3	-0.9
M74	24.7	23.9	28.1	-2.8	-7.7	-1.8	2.1	14.7	21.6	6.9
M75	25.1	27.1	29.7	1.7	-4.9	-2.2	3.4	18.5	26.2	7.7
M76	23.2	31.2	28.7	0.3	-3.4	2.5	6.0	24.4	32.[illegible]	[illegible]
M77	27.4	26.5	31.0	1.4	[illegible]	[illegible]	4.3	[illegible]	[illegible]	[illegible]
M78	23.0	31.8	28.7	1.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M79	22.7	27.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M80	21.5	25.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M81	25.1	29.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M82	22.2	29.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M83	25.6	27.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M84	25.8	26.3	29.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M85	22.0	25.9	27.3	0.5	[illegible]	[illegible]	5.3	15.8	24.1	[illegible]
M86	26.7	31.6	28.9	5.6	0.5	[illegible]	7.2	13.6	16.1	2.5
M87	24.6	26.3	23.8	2.0	-5.4	[illegible]	5.5	18.3	22.9	4.6
M88	22.5	24.6	27.5	-4.3	-6.3	[illegible]	3.4	9.8	11.3	1.5
M89	28.4	29.0	31.0	0.6	-4.3	1.9	[illegible]	12.1	[illegible]	[illegible]
M90	23.4	26.7	27.4	3.2	-0.1	1.4	[illegible]	13.2	[illegible]	[illegible]
M91	22.5	24.4	27.7	-0.3	-5.2	-3.3	[illegible]	[illegible]	[illegible]	[illegible]
M92	25.2	26.5	29.4	-0.4	-4.6	-0.9	[illegible]	[illegible]	[illegible]	[illegible]
M93	25.8	29.0	31.2	-5.4	-11.2	-3.8	[illegible]	[illegible]	[illegible]	[illegible]
M94	27.5	26.4	31.5	-1.2	-5.5	-2.4	[illegible]	[illegible]	[illegible]	[illegible]
M95	24.6	29.0	29.5	0.1	-6.9	-4.1	[illegible]	[illegible]	[illegible]	[illegible]
M96	24.2	27.9	26.9	-2.8	-6.1	2.1	6.7	[illegible]	[illegible]	[illegible]
M97	32.5	32.6	38.5	3.7	9.3	-5.7	5.3	[illegible]	[illegible]	[illegible]
M98	29.4	30.0	33.5	[illegible]	-13.2	-3.3	[illegible]	[illegible]	[illegible]	[illegible]
M99	28.4	34.9	36.6	-2.7	-8.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M100	29.6	31.1	34.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LFROX	LBDIS	LBPROX	[illegible]
M101	32.5	28.2	38.9	0.4	-5.0	-4.4	5.3	9.1	13.6	[illegible]
M102	26.7	33.9	30.9	0.4	-2.1	3.2	2.3	27.6	30.0	[illegible]
M103	31.4	32.7	34.3	-6.5	-9.5	-1.0	4.8	16.3	19.8	[illegible]
M104	28.9	33.3	34.0	2.7	-5.3	1.0	6.5	21.5	[illegible]	[illegible]
M105	26.8	30.0	31.1	0.5	-2.6	4.3	5.5	16.6	[illegible]	[illegible]
M106	32.5	32.1	35.8	4.4	2.4	3.4	7.4	23.6	[illegible]	[illegible]
M107	28.2	30.1	31.9	-3.4	-11.6	3.0	5.1	13.0	[illegible]	[illegible]
M108	28.0	33.9	31.1	5.0	1.1	3.9	[illegible]	[illegible]	[illegible]	[illegible]
M109	27.1	26.5	34.0	4.0	-4.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M110	27.7	35.3	33.2	0.6	-9.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M111	30.8	33.0	34.5	-5.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M112	28.3	26.8	31.7	4.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M113	26.5	33.1	34.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M114	27.7	28.8	34.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M115	31.0	35.6	33.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M116	26.2	29.1	30.6	2.9	[illegible]	[illegible]	[illegible]	30.9	[illegible]	14.6
M117	27.0	29.0	32.4	-0.2	[illegible]	0.6	4.1	34.4	28.5	4.1
M118	25.0	29.4	28.1	6.7	7.8	[illegible]	[illegible]	14.6	17.5	2.9
M119	32.1	28.6	34.7	-5.3	-17.2	-6.6	[illegible]	12.7	16.8	4.1
M120	26.4	34.1	32.4	-0.5	-6.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M121	26.1	30.4	29.3	0.0	-6.5	2.5	[illegible]	[illegible]	[illegible]	[illegible]
M122	28.4	31.0	32.2	-0.1	-6.9	-0.8	7.2	[illegible]	[illegible]	[illegible]
M123	31.9	32.0	34.3	1.0	-5.1	0.7	6.1	[illegible]	[illegible]	[illegible]
M124	28.1	33.9	34.8	0.7	4.0	0.2	6.6	[illegible]	[illegible]	[illegible]
M125	25.7	28.1	28.7	-1.9	-4.8	1.9	3.4	20.5	[illegible]	[illegible]
M126	26.7	31.4	31.0	-1.5	-8.3	-0.2	5.2	24.2	[illegible]	[illegible]
M127	27.0	28.0	30.2	3.2	-0.6	4.1	4.5	16.6	[illegible]	[illegible]
M128	24.2	28.1	29.0	-4.5	-9.0	-2.9	5.1	18.3	[illegible]	[illegible]
M129	22.6	27.8	28.1	[illegible]	[illegible]	0.9	6.9	13.5	[illegible]	[illegible]
M130	27.5	24.9	[illegible]	1.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	[illegible]	[illegible]	[illegible]
M131	28.7	26.2	32.5	-10.4	-11.4	-1.3	-2.3	9.6	[illegible]	[illegible]
M132	22.0	28.2	27.1	[illegible]	5.0	1.3	3.5	17.6	[illegible]	[illegible]
M133	25.9	28.1	32.4	2.8	[illegible]	[illegible]	7.5	12.0	[illegible]	[illegible]
M134	23.8	[illegible]	[illegible]	[illegible]	-6.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M135	26.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M136	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M143	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M144	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M145	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M146	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M147	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1.1	3	[illegible]	[illegible]	[illegible]	2	3.8
[illegible]	[illegible]	[illegible]	[illegible]	4.9	4.1	[illegible]	[illegible]	[illegible]	31.7	9.6
[illegible]	[illegible]	[illegible]	36.1	1.8	-6.6	[illegible]	[illegible]	[illegible]	[illegible]	6.2
[illegible]	[illegible]	[illegible]	29.3	4.9	0.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	28.5	0.1	-6.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	28.0	31.7	-1.2	-6.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-1.0	-7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	LBDIS	[illegible]	[illegible]
M161	30.0	31.9	32.8	2.8	-2.4	2.2	7.2	19.6	[illegible]	[illegible]
M162	29.2	31.5	33.1	0.9	-9.0	-2.0	8.5	12.1	[illegible]	[illegible]
M163	25.0	27.6	31.7	-1.8	-6.2	5.5	7.4	20.8	[illegible]	[illegible]
M164	25.2	26.7	30.2	-0.1	-3.5	1.6	6.0	19.6	[illegible]	[illegible]
M165	21.8	21.7	24.8	-1.0	-6.4	0.2	4.0	17.0	[illegible]	[illegible]
M166	26.2	32.3	[illegible]	4.0	1.4	[illegible]	[illegible]	3.1	[illegible]	[illegible]
M167	26.6	30.[illegible]	28.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	22.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	26.5	36.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.6

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	LBDIS	LBPROX	[illegible]
M191	26.1	27.6	28.8	-0.1	-6.7	-1.1	5.4	13.8	17.0	[illegible]
M192	22.6	[illegible]	27.5	0.6	-3.6	[illegible]	5.4	16.2	[illegible]	[illegible]
M193	27.0	[illegible]	[illegible]	[illegible]	1.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M194	23.2	24.8	29.8	1.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M195	25.2	30.9	29.4	2.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M196	24.6	[illegible]	28.3	-0.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	30.0	29.8	-3.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-1.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M203	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.8	0.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10.7	1.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	22.7	2.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	23.1	3.1
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18.5	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	[illegible]	[illegible]	[illegible]
M221	23.4	26.7	26.4	-0.6	-5.6	-3.3	4.4	[illegible]	[illegible]	[illegible]
M222	24.6	[illegible]	28.0	-1.[illegible]	[illegible]6.3	0.2	3.9	[illegible]	[illegible]	[illegible]
M223	[illegible]	24.[illegible]	30.0	[illegible]4	-9.5	-7.3	4.[illegible]	[illegible]	26.3	[illegible]
M224	27.9	[illegible]	41.1	-0.9	-6.2	[illegible]	[illegible]	1.[illegible]	3.6	[illegible]
M225	[illegible]	[illegible]	[illegible]	[illegible]	-3.[illegible]	[illegible]	[illegible]	9.[illegible]	12.5	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M2[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M23[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M2[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M2[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M23[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	23	[illegible]
M23[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]4	19	[illegible]
H[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	21.4	24	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1.3	-3.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-5.5	-3.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	2.7	-10.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0.[illegible]	-1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	LBDIS	LBPROX	[illegible]
H15	27.8	29.4	33.5	4.4	-4.3	0.7	7.2	13.7	15.0	[illegible]
H16	26.0	33.0	31.7	4.3	-2.7	0.5	7.3	14.3	20.6	6.5
H17	23.4	33.1	28.6	1.2	-2.8	4.0	4.8	25.5	36.4	10.9
H18	30.6	29.6	25.4	-4.0	-9.5	-0.[illegible]	3.4	16.[illegible]	[illegible]	5.0
H19	30.2	[illegible]	31.[illegible]	-3.4	-9.[illegible]	-0[illegible]	[illegible]	14.9	[illegible]	[illegible]
H39	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H40										
H41										

Table A.1 Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	[illegible]	BPROX	LTORS
H45	24.4	30.8	30.4	1.2	-2.6	0.7	5.7	[illegible]	20.9	[illegible]
H46	26.2	[illegible]	30.8	0.7	-5.4	-0.6	5.3	16.1	17.5	1.4
H47	25.0	[illegible]	29.7	-9.3	-12.1	-1.3	2.0	14.7	32.6	16.9
H48	23.6	[illegible]	[illegible]	1.4	-3.5	[illegible]	6.2	7.5	10.5	3.0
H49	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1. Continued

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	LBDIS	LBPROX	LTORS
H76	24.9	26.5	30.3	2.5	-1.6	2.9	6.2	17.1	18.1	1.0
H77	23.0	27.4	27.3	-6.5	-12.0	-3.8	1.7	16.8	21.3	4.5
H78	27.6	26.7	33.1	3.5	-1.9	[illegible]	7.5	11.1	[illegible]	[illegible]
H79	22.8	30.2	29.7	5.5	1.4	[illegible]	7.4	[illegible]	[illegible]	[illegible]
H80	29.9	29.6	[illegible]	-2.5	-8.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H81	25.0	25.0	29.9	[illegible]	-10.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T1	29.4	30.3	33.8	[illegible]	-6.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T2	29.5	36.9	31.1	[illegible]	-3.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T3	[illegible]	[illegible]	[illegible]	1.7	-2.8	0.6	[illegible]	[illegible]	[illegible]	[illegible]
T4	[illegible]	[illegible]	[illegible]	3.9	-12.2	-6.7	[illegible]	[illegible]	[illegible]	[illegible]
T5	[illegible]	[illegible]	[illegible]	-2.0	-7.6	-2.5	[illegible]	[illegible]	[illegible]	[illegible]
T6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table A.1 Continued

CASE	LTRMID	APSUB	TRSUB	LR1	LR2	LR3	LPROX	[illegible]	[illegible]	[illegible]
T25	27.9	[illegible]	[illegible]	[illegible]	-3.2	3.2	3.3	[illegible]	[illegible]	[illegible]
T26	[illegible]	[illegible]	33.2	[illegible]	[illegible]	[illegible]	4.1	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-4.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Appendix I

[illegible] SAMPLE [illegible]

Table B 1: Louisiana State University Test Sample Data

CASE	NUMBER	SEX	AGE	HMAX	ROBL	RBICON	RAPMID	RTRMID	RAPSUB	RTRSUB	RR1	RR2
L1	82-4	1	1	429.00	426.00	79.00	32.30	27.10	29.40	33.60	-1.3	-3.[illegible]
L2	83-9	1	0	429.00	426.00	79.00	30.20	23.80	28.80	27.30	-2.9	[illegible]
L3	83-1	2	0	434.00	430.00	71.00	29.30	22.40	24.40	[illegible]	[illegible]	[illegible]
L4	82-17	1	1	466.00	462.00	77.00	29.60	31.60	32.[illegible]	[illegible]	[illegible]	[illegible]
L5	[illegible]	1	1	47[illegible]	476.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table B.1. Continued

CASE	RR3	RPROX	RBDIS	RBPROX	LMAX	LOBL	LBICON	LAPMID	LTRMID	LAPSUB	LTRSUB
L1	0.0	-0.7	10.60	10.90	433.00	431.00	80.00	29.60	27.40	28.30	[illegible]
L2	0.2	1.9	15.80	17.30							
L3	-5.7	4.8	13.30	17.30	432.00	428.00	70.00	29.60	[illegible]	[illegible]	[illegible]
L4	5.2	4.9	14.10	13.70	471.00	469.00	80.00	31.00	[illegible]	[illegible]	[illegible]
L5	-1.9	6.2	8.10	11.30	477.00	474.00	84.00	30.60	[illegible]	[illegible]	[illegible]
L6	[illegible]	3.6	14.50	16.30	477.00	473.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L7	-2.6	6.6	18.30	18.50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L8	4.0	[illegible]	19.50	25.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L9	[illegible]	[illegible]	24.20	32.80	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L10	-0.3	[illegible]	[illegible]	27.90	505.00	501.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L11					430.00	427.00	74.00	[illegible]	[illegible]	[illegible]	[illegible]
L12	[illegible]	[illegible]	22.40	35.20	481.00	480.00	89.00	33.60	[illegible]	[illegible]	[illegible]
L13					521.00	519.00	94.00	35.70	[illegible]	[illegible]	[illegible]
L14	[illegible]	[illegible]	17.30	21.50	457.00	451.00	82.00	[illegible]	[illegible]	[illegible]	[illegible]
L15	[illegible]	[illegible]	[illegible]	6.30	478.00	476.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table 8 1 Continued

CASE	LR1	LR2	LR3	LPROX	LBDIS	LBPROX
L1	0.9	-1.8	0.5	3.2	12.70	16.00
L2						
L3	-4.3	-12.8	-8.5	5.2	[illegible]	[illegible]
L4	[illegible]	-1.1	[illegible]	[illegible]	[illegible]	[illegible]
L5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1.8	4.7	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	4.6	[illegible]	25.10
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	33.40
[illegible]	[illegible]	[illegible]	1.7	3.5	13.00	14.60
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	22.70
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table B.2   First African Baptist Church Test Sample Data

CASE	NUMBER	SEX	AGE	AMAX	ROBL	RBICON	RAPMID	RTAMID	RAPSUB	RTRSUB	RR1	RR2
P1	22	1	1	506.00	501.00	80.00	27.70	27.50	30.50	30.30	1.30	0.76
P2	21	2	1	404.00	401.00	67.00	24.10	24.00	23.30	29.10	0.60	[illegible]
P3	23	1	1	432.00	432.00	85.00	27.60	27.10	28.10	32.10	[illegible]	[illegible]
P5	26	1	1	[illegible]	439.00	[illegible]	30.30	30.80	[illegible]	[illegible]	[illegible]	[illegible]
P6	30	[illegible]	1	406.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
P7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]									

Table B.2: Continued

CASE	RR3	RPROX	RBPROX	REDIS	LMAX	LOWL	LBICON	LAPMID	LTRMID	LAPSUB	LTRSUB
P1	11.60	3.70	25.90	23.20	507.00	504.00	80.00	27.80	28.60	27.40	31.20
P2	2.90	0.20	19.80	14.10	403.00	398.00	70.00	23.30	23.70	25.10	[illegible]
P3	4.10	3.40	16.90	15.70	432.00	432.00	85.00	[illegible]	[illegible]	[illegible]	[illegible]
P5	-1.90	4.10	15.40	14.80	448.00	444.00	75.00	[illegible]	[illegible]	[illegible]	[illegible]
P6	3.80	2.40	16.70	17.20	414.00	412.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
P7	2.30	2.10	18.80	[illegible]	433.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-2.60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					[illegible]	[illegible]	[illegible]	25.80	[illegible]	23.30	[illegible]
[illegible]					[illegible]	[illegible]	74.00	29.80	[illegible]	29.40	[illegible]
[illegible]					[illegible]	[illegible]	75.00	36.00	[illegible]	[illegible]	[illegible]

CASE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
P1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

APPENDIX [illegible]

MISCLASSIFIED CA[illegible]

Table C.1 Misclassified Cases

CASE	NUMBER	SIDE	SEX	RACE	AGE	RMAX	ROBL	ABICON	RAPMID	RTRMID	[illegible]	[illegible]
M13	12883	Both	2	1	1	430.0	427.0	72.0	25.5	19.6	[illegible]	[illegible]
M18	9A87	Left	2	1	2	423.0	419.0	73.0	30.0	[illegible]	[illegible]	[illegible]
M34	11888	Left	1	2	3							
M237	1L94	Left	1	2	3							
M40	591	Both	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M45	645	Both	1	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M52	76[illegible]	Right	1	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M63	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Left	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M60	[illegible]	Left	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M64	129	Right	1	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M165	187R	Left	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M166	196	Both	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M184	1591	Both	1	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M196	1602	Both	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M211	1553	Left	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M217	146R	Both	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M227	[illegible]	Right	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M229	[illegible]	Right	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25.[illegible]	[illegible]
H26	320659	Left	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24.0	[illegible]	[illegible]
H28	320690	Both	[illegible]	[illegible]	5	468.0	462.0	[illegible]	[illegible]	27.2	29.2	[illegible]
H29	320689	Left	[illegible]	[illegible]								
H38	321026	Both	[illegible]	[illegible]	5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H39	321252	Left	[illegible]	[illegible]								

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Left										
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Left										
[illegible]	[illegible]	Both				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H58	321723	Both				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H60	321186	Left				[illegible]	396	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H61	321618	Right				498.0	496	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H62	321188	Both				[illegible]	436	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Left										
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Both				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Left										
[illegible]	[illegible]	Right				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T15	6-89	Right				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T16	4-88	Both				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T19	6-88	Both				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T22	15-90	Left				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	28-90	Both				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	15-89	Left				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Right				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Left										
[illegible]	[illegible]	Right				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	87-8	Right				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table C.1: Continued

CASE	RR1	RR2	RR3	RPROX	RBDIS	RBPROX	RTORS	LMAX	LOBL	[illegible]	[illegible]
M13	0.7	-3.6	1.1	4.1	20.0	21.3	1.3	435.0	432.0	[illegible]	[illegible]
M18	-0.8	[illegible]	-4.6	5.9	13.7	15.0	1.3	[illegible]	[illegible]	[illegible]	[illegible]
M34								[illegible]	[illegible]	[illegible]	[illegible]
M237								[illegible]	[illegible]	[illegible]	[illegible]
M40	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M52	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M63	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M78	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24.9
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	19.5	1	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	26.2	6.4	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.2	20.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M186	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M211	-0.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M217	-0.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M227	4.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M228	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table [illegible] (Continued)

CASE	RN1	RR	RR3	RPROX	RBDIS	[illegible]	RTOP	AY	LOBL	[illegible]	[illegible]
H45								[illegible]	416.0	[illegible]	[illegible]
H49	1.8	[illegible]	2.6	7.3	16.4	[illegible]	[illegible]				
H54								[illegible]	[illegible]	[illegible]	[illegible]
H56	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CASE	LTRMID	LTPSUB	LTRSUB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M13	18.9	27.1	28.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M18	20.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M237	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]							
M150	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M160	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M164	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table [illegible]

CASE	LTRMID	LAPSUB	LTRSUB	LR1	LR2	LR3	LPROX	LBDIS	LBPROX	[illegible]
H45	24.4	30.8	30.4	3.2	-2.6	[illegible]	5.7	12.1	[illegible]	[illegible]
H49										
H54	24.7	27.1	28.4	-1.6	-7.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H56	27.1	24.9	31.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H58	34.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
H60	26.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	27.3	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	27.7	26.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	25.5	29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20.3	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18.6	[illegible]
[illegible]	[illegible]	22.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.3	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]

Mary [illegible] degree in cr[illegible] [illegible] Mississippi in May 1985 [illegible] 1990, s[illegible] school at Louisiana State [illegible], Mary earne[illegible] of Arts degree in physical anthropology in May 1992 [illegible] began her doctoral career in forensic anthropology at [illegible] University of Florida in August 1992

In May 1994, Mary returned to Mississippi, where [illegible] went to work as a Patrol Officer with the Bay St Louis [illegible] Department. In addition, Mary began consulting [illegible] forensic anthropologist for the Mississippi State Medical Examiner's Office, as well as teaching in the Departme[illegible] Criminal Justice at the University of Southern Mississippi -Gulf Park. Upon completion of her Ph D , Mary plans on teaching full time at USMGP and continuing to consult. Mary lives in Bay St Louis with her husband, Richard, and her dogs, Murphy and Sadie.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy

William R Maples

William R. Maples, Chairman
Distinguished Service Professor of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy

Anthony Falsetti
Assistant Professor of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy

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William Hamilton
Associate Professor of Pathology and Laboratory Medicine

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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Associate Professor
of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This dissertation was submitted to the Graduate Faculty of the Department of Anthropology in the College of Liberal Arts and Sciences and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 1986

Dean, Graduate School